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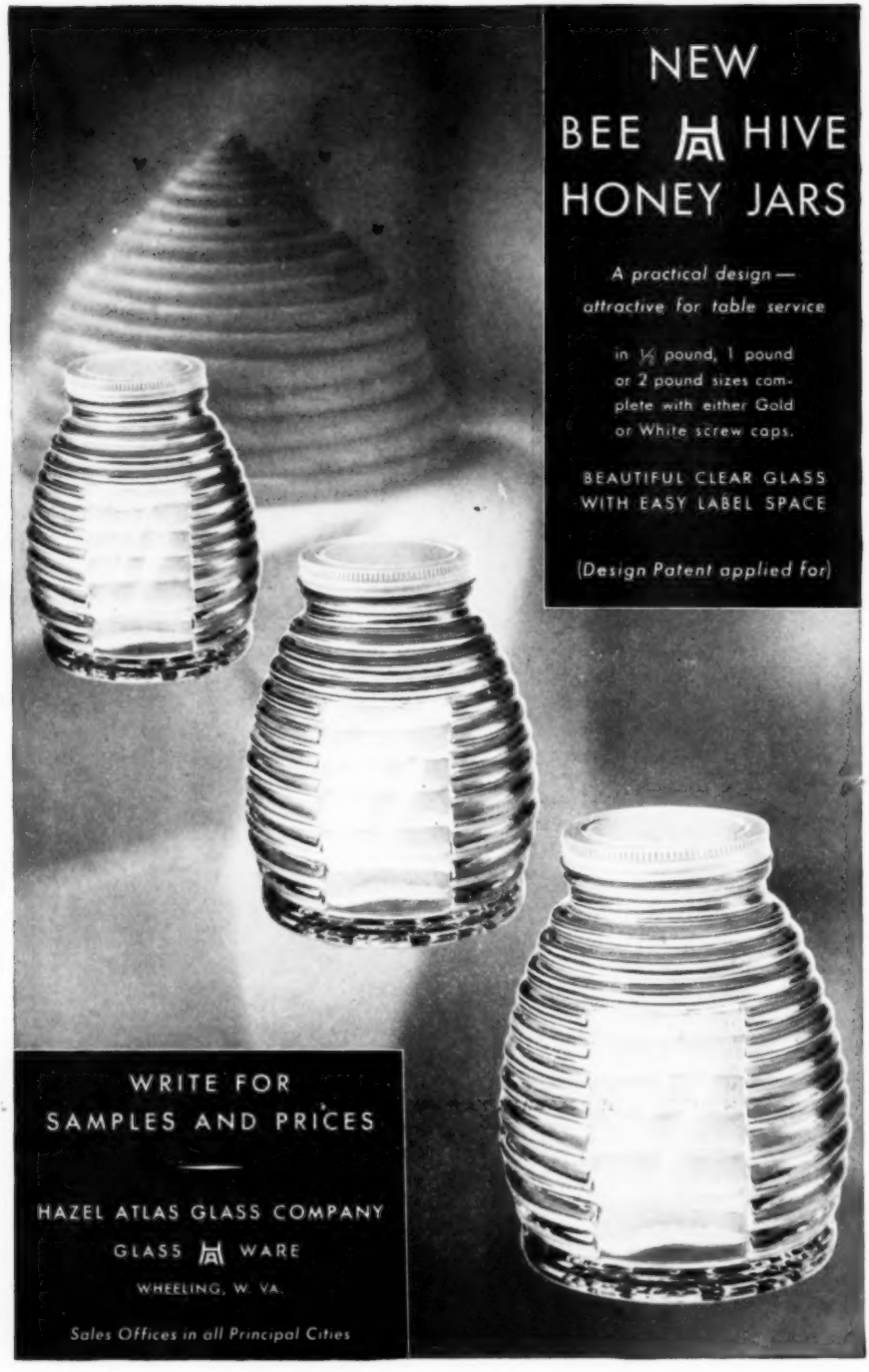
THE NEW MANAGER

January - 1932
Vol. LX. No. 1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10—Excelsior Wood Covers, 8-frame size, nailed and painted, each, 50c.

10—Supers for 4¼x1½ Sections, ten-frame, nailed and painted, with section holders and fences, old style hand holds, at $1.20 each.

1700 Jumbo Frames, old style end-bars, price, $4.50 per 100.

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2 crates—8-frame metal top deep cover and winter case in 5s, at $4.00.

Some Good Buys of Books on Beekeeping

We are closing out our stock of some books at exceptionally low prices. A number of them are in first-class condition. Others have the covers damaged. While they last:

Starting Right with Bees, 128 pages, 124 illustrations, the best beginner's book ever written; a few more slightly damaged copies, 50c each postpaid.

5—Honey Plants of North America, by Lovell, damaged, $1.00 each.

10—Queen Rearing Simplified, by Jay Smith, damaged, 65c.

60—Management of Outapiaries, paper cover, by Doolittle, good condition, 30c.

11—How to Keep Bees, by Comstock, cloth cover, good condition, 50c.

10—Huber's Observations on Bees, fine condition, $2.25.

40—Langstroth on the Hive and the Honeybee, good condition, 60c.

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Honey Prospects and Markets

U. S. Government Report of December 15 Summarized.)
(Information from Producing Areas for First Half of December.)

California Points—In southern California the weather has continued cool during the past two weeks, with considerable cloudy and rainy days. In fact, rainfall to date is reported heavier than last year to date, although precipitation was delayed later this fall than usual. Sages and other honey plants have started, but rapid growth is being held back by cold nights. Fairly ample supplies of buckwheat-sage honey remain in southern California, including some old stock dating back to 1926, and there are light supplies of alfalfa honey in the Imperial Valley. Export demand shows no improvement, and eastern demand is very light, but small lot selling locally continues in fair volume. However, many beekeepers now are completely sold out of the lighter grades of honey. Sales reported by beekeepers, ton lots, orange, few sales extra white, 6½-7c, and occasional sales higher; white, 5¾-6¼c; few higher; light amber, 4-4½c; sage, white, 7c; extra light amber, mostly 5c; light amber sage, 4c; few higher; buckwheat-sage, light amber to extra light amber, 4¼-4½c; many beekeepers holding for 5-5½c; light amber buckwheat, 4¼-4½c; few higher. Beeswax is in limited demand but supplies are growing light. Ordinary lots are bringing 10-12c per lb.; extra good quality 14-15c per lb. In northern California the best colonies in orchards for the almond bloom have a cluster across five to nine frames. Manzanita is heavily budded and far advanced, which is a good indication for a heavy bloom. Filaree is coming up freely. Bees are heavier in supplies than normal, and the cold weather conserves these supplies. Colonies have been offered for sale very cheap. The movement of honey from producers' hands, though not brisk, has been normal, and in a few instances prices have been slightly higher. Some inquiry reported from Germany, but most of the German orders were filled with honey from Hawaii. Eastern interest in honey continues light. Sales reported by beekeepers, per lb., star thistle, white, 5-6⅔c; extra light amber, 4-5½c; few higher; light amber, 4c; mixed star thistle and alfalfa, light amber, 3¼-4c; light amber alfalfa, 3½-3¾c; few higher; 1 car amber, source not given, 3½c; light amber mixed flowers, 3½c; small pails extra light amber thistle, 8-10c per lb. Beeswax, 14c cash, 15c in trade, with few sales light colored wax reported at 18c per lb.

Pacific Northwest—West of Cascades: The condition of bees going into winter quarters has been irregular, but generally good. Lack of stores is most pronounced in the lowlands, where fireweed bloom was poorest. The past two weeks have been colder than normal, with considerable freezing weather and many days of rainfall. Few sales reported of water white fireweed at 8c per lb. East of Cascades: The November snowfall is said to have been the heaviest in years, and snow or rain has fallen on several occasions during the past two weeks, with snow steadily increasing in the mountains. Demand for honey is reported improving. Few sales reported of light amber alfalfa, 60s, 5½c per lb.; small pails, 10c per lb.

Intermountain Region—Some inquiry reported for carlots of honey, and sales locally are reported surprisingly good. A Wyoming reporter, for example, says that nearly half the year's crop of Wyoming will be sold within the state. As the stocks of honey steadily lessen, the market seems to improve and in some section prices have advanced 1c per lb. Carlot sales, white to extra white sweet clover and alfalfa, 4¾-5c; some water white, 5⅛-5¼c, and some held at 5½c; with 1 car reported sold at 5½c; ton lots and less, 5½-7c; small pails, 7-9c per lb.; light amber alfalfa and sweet clover, 1 car, 4½c; small pails dark extracted, 5c; 1 lot small pails half white and half amber, 8c per lb. Bulk comb white sweet clover and alfalfa, 8c per lb. No. 1 white section comb reported sold at $3.00-3.25 per case. Beeswax, 15c per lb. cash, 17c per lb. in trade.

Arizona—Heavy rains have fallen and the soil is well filled with moisture. Late November and early December were unusually cold. Supplies of alfalfa honey are light in both the Yuma and Phoenix areas—in fact, supplies are light everywhere in the state. Sales reported, ton lots or more, Phoenix section, light amber to extra light amber alfalfa, 3¾-4½c per lb. Some white mesquite is being held at 4½-5c per lb., with white catsclaw held at $5.00-5.50 per case of 120 lbs.

Southwestern States—South central and southwestern Texas: This area, which remained dry much longer than sections to the north and west, has now had rains, greatly improving prospects for horsemint and other honey plants for next season. There is nothing for bees to work on, however, and it has been too cold for them to fly much. The crop was much better than that of a year ago, and considerable honey remains unsold. Prices reported generally low, but some sales in small containers reported at 8½c per lb. for extracted and 8-9½c per lb. for bulk comb. Beeswax, 17-20c per lb.

Plains Area—Red River Valley of North Dakota and Minnesota. Most colonies were placed in cellars before the last severe spell of cold weather, although a few beekeepers delayed too long and the colonies suffered somewhat from the cold. Bee cellars are covered with several inches off snow and cellar temperatures are steady. In some sections the snow is so deep that the frost has not gone into the earth. Demand for honey is light to good with different beekeepers. Sales reported of large lots white to water white extracted, 6-7c per lb. including 1 car at 6¼c; 60s, 7½c per lb.; No. 1 white comb, $3.50 per case. Light colored beeswax, 19c per lb. South Dakota: The eastern part of the state has had considerable precipitation, both rain and snow, during the past month, to protect the honey plants, but less has fallen in the western part of the state. Bees were generally in the cellars before cold weather came on, and appear to be in good condition. Sales reported of amber extracted in large lots at 5-6c per lb.; white, small pails, 9-11c per lb.

Summary—For another two-week period, the weather has been much colder in the western half of the country than in the eastern portion of the United States. Bees have been able to fly occasionally in the East, even in New England, but in the West they have been confined to the hives for many weeks. Rainfall has been frequent over the East, South and Pacific Coast, and snows have fallen on several occasions also in the North and West. Rainfall in many sections, including California, is heavier than that of last season to this date. The abundant precipitation almost everywhere has greatly encouraged beekeepers looking forward to next year's activities. The fall consumption of stores has been excessive, especially in the East, but so far there seems to be little reason for apprehension. Many beekeepers all over the country, report that demand for honey in small lots is good and that honey is moving better this year than last, though at lower prices. When con-

sidering that honey prices are slightly below the levels of a year ago, beekeepers should also remember that prices of corn, hogs, wheat, cotton and tobacco, for example, have only been about half as much this fall as prices of last year. While the lower prices of honey have been of help in increasing the movement this year, more important has been the fact that beekeepers themselves have used more initiative and have taken more time in endeavoring to sell their honey personally. In conseuence, many beekeepers in the West, where crops were light anyway, have already disposed of their honey. It is encouraging to note that several of these are already buying from others in order to keep their customers supplied. This practice is the only satisfactory method of retaining a list of satisfied customers from year to year.

Monthly Report of Honey Producers

Early in December we sent the following questions to honey producers: 1. What per cent of honey produced in your locality has left the hands of the producers? Give answer in per cent. 2. At what price has honey been sold, or contracted for, if any, in large lots (carload or less) in your locality during the past month for (a) extracted honey, per lb.; (b) comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 6. How much of this season's crop is being sold locally in your locality? Give answer in per cent. 7. What is your estimate of the prospects for 1932, considering the present condition of the bees and the honey plants, as compared with a five-years average for your locality? Give answer in percent. The answers are tabulated as follows:

State. Name.	Pct. sold.	Large lots. Ex.	Large lots. Comb.	To grocers. Ex.	To grocers. Comb.	Retail. Ex.	Retail. Comb.	Movement.	Sold locally	1932 pros.
Ala. (J. M. Cutts)	50	..	..	$.45	$3.60	$.65	$.20	Slow	90	100
Ark. (Jas. Johnson)	50	..	..	..	3.60	1.00	.20	Slow	100	80
B. C. (A. W. Finlay)	80	.10½	..	.75	..	.85	..	Fair	80	100
Calif. (L. L. Andrews)	40	..	..	..	..	.84	.20	Slow	2	75
Calif. (F. J. Edwards)	75	.06	3.75	.45	4.00	.65	.22	Fair	80	100
Colo. (O. E. Adcock)	80	.06½	..	.45	3.60	.55	.20	Slow	50	75
Colo. (J. A. Green)	40	..	..	.50	2.50	.70	.15	Slow	75	100
Conn. (Allen Latham)	25	..	..	.80	4.00	1.00	.32	Fair	50	200
Conn. (A. W. Yates)	75	.06	3.25	.70	4.50	1.00	.30	Fair	100	..
Fla. (H. Hewitt)	70	..	..	.50	..	.65	..	Fair	50	100
Ga. (J. J. Wilder)	30	.06	..	.50	..	.65	..	Slow	10	75
Ill. (A. L. Kildow)	30	.05	..	..	3.00	.50	.15	Fair	100	90
Ind. (T. C. Johnson)	30	..	..	.60	3.00	.75	.20	Slow	80	100
Ind. (E. S. Miller)	30	..	..	.60	3.80	.80	.20	Slow	95	100
Iowa. (F. Coverdale)	..	.06	..	.45	3.50	.50	.16	Fair	90	75
Kans. (J. A. Nininger)	40	..	..	.55	3.85	.65	.18	Fair	100	100
La. (E. C. Davis)	60	.04½	..	.50	..	.65	..	Fair	75	100
Md. (S. G. Crocker, Jr.)	..	..	..	1.00	5.50	1.25	.30	Slow	90	100
Mich. (I. D. Bartlett)	75	..	..	.50	3.50	.60	.20	Fair	100	90
Mich. (L. S. Griggs)	50	.06½	..	.45	4.00	.55	.20	Fair	35	50
Mich. (F. Markham)	75	.07½	..	.65	3.50	.75	.20	Fair	90	100
Mich. (E. D. Townsend)	15	.07½	..	..	..	..	..	Slow	15	65
Minn. (B. L. Morehouse)	20	.06½	..	.50	3.80	.65	..	Fair	10	85
Minn. (Francis Jager)	..	.06½	..	..	..	..	..	Good	..	..
Minn. (F. W. Ray)	40	.06	3.25	.50	3.87½	.60	.21	Slow	90	85
Mo. (J. M. Romberger)	..	..	..	..	..	.70	.15	..	..	..
Nebr. (J. H. Wagner)	40	.05½	..	.50	3.60	.60	.20	Slow	80	90
Nev. (G. G. Schweis)	80	.04	..	.40	3.50	.65	.20	Fair	5	75
N. J. (E. G. Carr)	50	..	..	..	..	1.00	.30	Slow	30	80
N. Y. (Adams & Myers)	50	.05	..	.55	3.75	.82½	.22	Fair	50	125
N. Y. (Geo. B. Howe)	..	..	..	.47½	3.50	.67½	.22	Fair	80	100
N. Y. (F. W. Lesser)	80	.06	3.25	.45	4.00	.50	.20	Fair	5	100
N. C. (C. S. Baumgarner)	100	..	..	.75	..	1.00	.25	Fair	100	100
N. C. (W. J. Martin)	20	..	..	.70	..	.90	.25	Slow	..	60
N. C. (C. L. Sams)	25	.07	..	.60	3.00	.85	.25	Fair	30	100
N. D. (Chas. Engle)	75	.05¼	..	.45	3.60	.55	.20	Fair	10	75
Ohio. (R. D. Hiatt)	25	.07	2.75	.65	3.60	.85	.20	Slow	100	100
Ohio. (Fred Leininger)	80	.06	3.50	..	..	..	..	Slow	5	90
Ohio. (J. F. Moore)	25	..	..	.60	3.50	.75	.20	Slow	10	90
Okla. (Jos. Heueisen)	90	..	..	1.00	4.80	1.25	.35	Fair	100	70
Okla. (C. F. Stiles)	80	..	..	.70	..	..	.20	Slow	100	80
Ore. (H. A. Scullen)	25	..	..	.42	..	.52½	..	Fair	100	100
Pa. (Harry Beaver)	7	..	..	.50	3.25	.60	.17	Fair	10	90
Pa. (D. C.Gilham)	60	..	..	.80	4.50	1.10	.28	Fair	100	..
S. C. (E. S. Prevost)	75	..	..	..	..	.67½	..	Slow	100	90
S. D. (L. A. Syverud)	70	..	..	.45	3.60	.59	.20	Fair	100	90
Tenn. (J. M. Buchanan)	95	..	..	..	..	1.00	.25	Slow	100	75
Texas (T. A. Bowden)	..	..	..	.55	..	.70	..	Slow	10	55
Texas. (J. N. Mayes)	75	.05	4.50	.50	..	..	..	Slow	20	80
Texas (H. B. Parks)	33	.04	..	.40	..	.60	..	Fair	60	100
Utah. (M. A. Gill)	..	..	..	.45	2.75	.50	.16	Fair	80	85
Vt. (Phillip Crane)	90	..	3.25	.60	4.17	.82½	.27	Fair	20	..
Va. (T .C. Asher)	..	..	..	.50	3.60	.75	.20	Slow	95	110
Wash. (W. L. Cox)	50	..	..	..	..	..	..	Fair	100	80
Wash. (G. W. B. Saxton)	60	..	..	.42	..	.45	..	Fair	25	100
W. Va. (W. C. Griffith)	25	..	..	.60	4.50	.75	.25	Slow	100	100
Wis. (N. E. France)	..	..	..	..	..	.75	.18	Slow	..	95
Wis. (James Gwin)	25	.07¼	..	.55	..	.62	..	Fair	95	60
Wyo. (E. C. Reed)	75	.05½	..	.40	3.60	.50	.20	Fair	40	50

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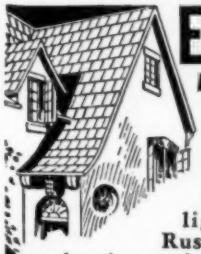

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Gleanings in Bee Culture
JANUARY, 1932

Southern Beekeeping Conference

As announced elsewhere in this issue, the Southern Beekeeping Conference will be held in St. Petersburg, Florida, February 2 and 3. On account of the peculiar problems of beekeepers in the South, largely incident to the rapid growth of the package-bee business in recent years, this organization has attracted a large number of southern beekeepers. No doubt an unusual interest will be manifested this year on account of the many new problems connected with the business of producing package bees and queens for northern honey producers.

Great Advance in Processing Honey

The rapidly increasing demand for honey in tin, which, in most cases, means larger packages and honey in the granulated form, has brought uppermost the problem of controlling fermentation and granulation in order to insure uniformity in appearance of honey in tin. The article beginning on page 12 in this issue by Dr. E. F. Phillips outlines briefly a great step in advance in processing honey. By this process the honey is uniform in appearance instead of some lots having fine crystals with a creamy consistency while other lots, often from the same apiary, have coarse crystals. Thus it is now possible to pack honey in tin that will keep without deterioration and that is uniform in appearance—two important factors in the merchandising of any product.

The American Honey Producers' League Meeting

The annual meeting of the American Honey Producers' League will be held at the Deshler-Wallick Hotel, Columbus, Ohio, January 26 to 28. On the preceding day, January 25, the American Honey Institute will hold its annual meeting. The Ohio State Beekeepers' Association, acting as host, will meet with the American Honey Producers' League, thus making this a combined meeting of unusual interest. The program will be devoted largely to discussions of the business of the organization, marketing, and recent developments in beekeeping practices. Hotel reservations and other information can be secured by writing to Charles A. Reese, State Department of Agriculture, Columbus, Ohio. The annual honey exhibit held in connection with the meeting of the American Honey Producers' League is in charge of Virgil N. Argo, Extension Apiarist, Ohio State University, Columbus, Ohio. Arrangements are being made for an imposing display of honey which will be open to the public during the meeting.

Movement of Honey.

Reports from beekeepers throughout the country indicate that the 1931 crop of honey will be well cleaned up before the 1932 crop appears. Beekeepers certainly are to be congratulated on the manner in which they have pushed local sales during the past several months, thus finding near at home an outlet for a large portion of the nation's honey crop. While much of this has been moved at lower prices, the producers have obtained, in most cases, more than they could have realized by shipping the honey to larger buyers. There is usually a distressingly low demand for honey in January, but if beekeepers and dealers in honey will continue pushing honey sales as they have during the past several months, the movement to consumers should pick up late in January or early in February, and result in a better cleaned-up condition than has prevailed for many years, thus clearing the way for the 1932 crop, whatever that may be.

Short-Sighted Salesmanship.

Beekeepers in various parts of the country are up in arms about statements which they say they heard over the radio to the effect that honey, other than that offered by the speaker, is adulterated with glucose. It is certainly to be hoped that any such short-sighted methods of selling hon-

ey will be corrected immediately, and an endeavor made to repair the damage already done by such misinformation. The public is already too willing to believe such absurd stories. In fact, the old, old adulteration bugaboo is still standing in the way of honey coming into its own as a staple article of food.

The fact is, there is almost no adulterated honey ever offered for sale in this country. In the enforcement of the Pure Food Law, the officials have found only a few cases since the passage of that law in 1906. It has been a long, hard pull during the past 25 years to restore even a moderate degree of confidence on the part of the public in the purity of honey. It is, therefore, extremely disconcerting to learn of such alleged statements in connection with selling honey.

A well-established principle in merchandising any product is "never knock a competitor's product." In doing so, one only knocks his own. To suggest that the other fellow's honey is adulterated, or is inferior in any respect, only suggests that all honey may be inferior or adulterated. Beekeepers and honey salesmen should keep in mind this first principle in merchandising, and learn to extol the virtues of their own product instead of degrading it by pointing out the defects in the other fellow's. Honey has so many virtues as a food for human beings that it should not be necessary to seek elsewhere for sales arguments. Any possible advantage in condemning a competitor's product is extremely temporary at best, and in most cases the damaging effects of such condemnation is almost immediately reflected to the detriment of the one who condemns.

Government Work in Beekeeping.

The report of the Bureau of Entomology for the fiscal year ending June 30, 1931, recently issued, contains a brief discussion of the work being carried on by the Division of Bee Culture under the direction of Jas. I. Hambleton. This discussion, brief as it is, conveys at least in a small degree an idea of the great breadth of work now being carried on by the government in behalf of beekeepers. In addition to the work that is being carried on at headquarters located just outside the city of Washington, laboratories have been established in the Inter-mountain Region at Laramie, Wyoming; in the South at Baton Rouge, Louisiana; and on the Pacific Coast at Davis, California. Each of these laboratories is carrying on work along special lines which can best be done in the particular locality and which should result in the greatest amount of benefit to beekeepers in the beekeeping region represented.

Experiments in breeding under controlled factors by artificial insemination of queen bees, is being pushed forward at the Washington laboratory. With the rapidity with which many generations of bees can be produced in a season, some surprising results may come from this work.

Work on the brood diseases is being carried on simultaneously in different laboratories. The findings of these men who are specializing on the brood diseases are gradually clearing up many of the doubtful points in regard to the diseases and their control.

Studies of various methods of wintering in the Inter-mountain Region promise to clear up many of the discrepancies in methods of wintering found best for that region and the East. The Southern Laboratory is continuing its work on the problems of breeders of package bees and queens, and is also working on honey-production problems peculiar to the South. The Pacific Coast laboratory is confining its work largely to surveys of outstanding beekeeping problems in that region preparatory to research on some of these problems.

Sowing Sweet Clover Seed.

One of the difficulties in the way of rapid expansion of the acreage of sweet clover in some localities is that of obtaining a good stand of young plants by the ordinary methods of seeding. Many farmers become discouraged when first trying out sweet clover for this reason alone. They may be anxious to grow sweet clover on account of its great value as pasture during dry seasons when other forage plants fail and on account of its great value in restoring the fertility of the soil, but if they fail to secure a good stand of young plants they are inclined to go back to red clover or some other forage plant less valuable to beekeepers.

When scarified sweet-clover seed is sown in wheat in the spring as alsike and red clover seed are usually sown, a few days of

mild weather may cause the seed to germinate only to be killed by cold weather later on. Apparently young sweet clover plants are more sensitive to cold soon after germination than those of the other clovers. If seeding is delayed until danger of cold weather has passed, the seedlings may have difficulty in surviving the competition of the rapidly-growing wheat, especially if a dry spell of weather is encountered. Experiments conducted by the Ohio Agricultural Experiment Station indicate that in the latitude of Columbus, Ohio, April 1, and of Wooster, April 15, are on the average about the most favorable dates for sowing scarified seeds in wheat. On any soil that becomes hard and dry in the spring, the Station recommends covering the seed to insure prompt germination by drilling it in with a disc-type drill, or harrowing, and in some cases, culti-packing. Better results are usually had by sowing sweet clover seed with oats than with winter wheat.

In many cases, good results are obtained by sowing either unhulled sweet clover seed or hulled, unscarified seed during the winter, but in this case heavier seeding is necessary, about 20 pounds per acre being recommended for the unhulled seed. The experiment station suggests a combination seeding of unscarified seed during late winter followed by a broadcast seeding of scarified seed in the spring. Unhulled seed can be sown during the winter months.

Forced Supersedure in Spring.

In an article in this issue on forced supersedure by C. A. Wood, beginning on page 15, a method is described by which swarming may be entirely eliminated in comb-honey production and a high spirit of work maintained in colonies during the honey flow. This is done by bringing about supersedure of the queens in the spring so that the young queen in each colony begins to lay about the time the main honey flow begins. Thus all the work connected with swarm control is accomplished prior to the beginning of the honey flow, leaving the beekeeper free to give his full attention during the honey flow to giving empty supers at the right time and in the right place, and removing the finished honey.

During recent years the tendency in swarm control has been in the direction of requeening instead of making artificial swarms among commercial comb-honey producers, as well as among producers of extracted honey located in regions where swarming may give considerable trouble during some seasons. Many extensive comb-honey producers have worked out a system of apiary management by which all colonies preparing to swarm are requeened. Some seasons this results in most of the colonies being requeened during the honey flow. Thus, the beekeeper may start the season hoping that, by skillful management, he may be able to carry the colonies through the honey flow with only a small percentage attempting to swarm, but may be compelled to treat from 50 to 90 per cent of them for swarming during seasons when the tendency to swarm is strong. This not only means an unduly large amount of work, but also interferes with honey production, since it is almost impossible to treat a colony for swarming during the honey flow without some interference with its work which results in a smaller amount of surplus honey. This is causing many beekeepers to look for some method of forced supersedure by which all colonies will be put in condition to go through the honey flow without swarming.

Since colonies which supersede their queens shortly before the main honey flow do not swarm during the season, the plan of replacing all the queens with young ones from the South in the spring was tried out many years ago, but it was found that simply killing the old queen and introducing a young one can not be relied upon to prevent swarming. Later it was discovered that an interval of no egg laying in connection with requeening usually results in no attempt to swarm during the season. This resulted in the familiar method of taking away the queen when a colony was found preparing to swarm, destroying all queen cells, then ten days later again destroying all queen cells and introducing a young laying queen.

It now appears that supersedure brought about by artificial means shortly before or at the beginning of the main honey flow results in no swarming and a high spirit of work during the season.

A great advantage in such a procedure aside from swarm control is the quick improvement of the strain of bees in an apiary thus made possible. By requeening the entire apiary, year after year, with queens reared from the best stock, all inferior stock is quickly eradicated.

Controlling Fermentation and Granulation

Dr. E. F. Phillips

A New Method of Processing Honey Which Prevents Fermentation and Improves Flavor of Honey

There is great variation in the granulation of honey, both in the time necessary for it to occur and in the nature of the crystals formed. There is also considerable variation in honeys from different floral sources with regard to their tendency to granulate, this variation being due to varying ratios of the sugars present. Several methods have been suggested for causing honeys to granulate quickly or smoothly, but most of the effort so far made in this country has been in devising methods for preventing granulation, as in the case of honeys put into bottles.

Because of the divergent opinions expressed on these subjects, and especially because of the practical results to be expected from a solution of some of these problems, it seemed time for some work on the subject. The work here reported was done by Dr. E. J. Dyce of the Ontario Agricultural College, for the past two years a graduate student at Cornell University. I have been asked to describe Doctor Dyce's work briefly, which I gladly do because he appears to have found a satisfactory solution for several troublesome problems and has contributed an important way of improving the honey market.

The fermentation of honey seems to be the source of increasing losses to beekeepers and honey dealers, and the reason this problem is now recognized as worse than formerly is clear. The sugar-tolerant yeasts which cause fermentation in honeys are present in practically all, if not in all honeys, and whenever conditions within the honey are right for their growth, spoilage of the honey begins.

For years it has been taught that fermentation of honey is due chiefly to the extraction of unripe honey, but some work done by another Canadian student, Mr. R. M. Pugh, shows that there is no correlation between the tendency to ferment and the density or body of a honey. Neither do honeys of certain floral sources seem to ferment worse than others. It is, of course, true that thin honeys usually ferment, but this is not the cause of more than a small fraction of the losses from fermentation experienced by beekeepers. The cluttering up of our minds with such theories has tended to retard progress in finding a solution for the fermentation problem.

Relation of Fermentation to Granulation

When honey granulates, part of the dextrose which it contains forms crystals, and these crystals have a water content of slightly over 9%, always the same per cent because the water in the crystal is locked up as water of crystallization and thus becomes inactive as water. When part of the water in a honey is thus removed with the solid phase of a honey, the remaining part of the original water in the honey is now all part of the liquid phase, and since the water content of the crystals is always less than that of the original honey, it follows by simple arithmetic that the water content of the liquid phase of the honey is higher than was originally the case with the honey as a whole. It is common for beekeepers to refer to a granulated honey as "solid," when as a matter of fact only a small fraction of the honey is in solid form. The small proportion which has formed crystals serves as a supporting frame work which gives the appearance of solidity to the entire mass.

Because of the increased water content in the liquid phase of granulated honey, fermentation practically always occurs in granulated honey and not in liquid honey. Since the water content of the liquid phase of granulated honey is higher, this gives conditions favorable to the growth of the sugar- tolerant yeasts which were present from the first. Then, whenever outside conditions, such as increased temperature, are suitable, fermentation begins. This explains why spoilage is greater in spring when the weather begins to warm up, than in fall or winter. The present necessity for holding honey for a longer time is therefore the economic cause of the increased losses from fermentation.

Methods of Preventing Fermentation

Various methods have been proposed for preventing honey spoilage, such as keeping it in cold storage (Marvin) or the use

of preservatives (Lochhead). Both of these methods seem either impractical or undesirable, and no method has been suggested that fits the needs of the beekeeper as well as the time-tested method of heating honey to about 160° F., for at that temperature the yeasts are destroyed. When honey is bottled, this is the temperature commonly used in preparing the honey, and there is never any fermentation in properly bottled honeys. Of course this heating destroys the enzymes in honey also, but the more recent work in honeys indicates that the loss of enzymes is not a matter of importance. The possibility of darkening honey by overheating seems to be far more serious a matter than the loss of enzymes.

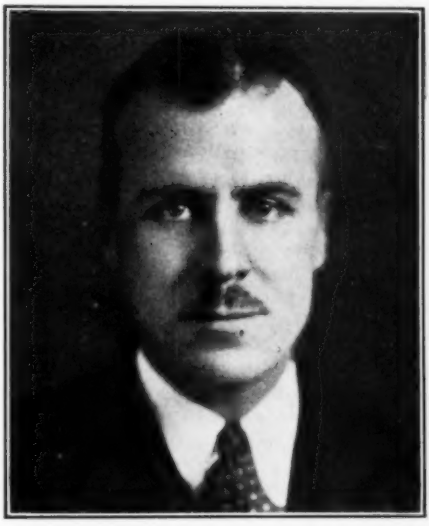
Coarse Crystals Objectionable in Granulated Honey

Unless a honey is hermetically sealed after being heated, granulation will probably occur again fairly soon in most honeys, and whenever granulation occurs in a honey which has once been heated, the crystals formed are almost invariably coarse, often making the honey unfit for table use. The practical problem in the control of fermentation is then to find some way of making the honey good after it is heated. This is the problem which Doctor Dyce has successfully solved, so that for the first time we appear to have a satisfactory means of controlling fermentation, while at the same time the honey can be made better to eat than ever before.

Unless honey is extracted from combs newly built from comb-foundation, there are always minute amounts of honey left in the combs from the previous crop. Almost without exception, this honey contains myriads of microscopic dextrose crystals, which have formed in the thin layer of honey since the combs were last used. When honey is again stored in these combs by the bees, most of these crystals are left and serve as "seed" for later granulation of the more recently stored honey. When combs are stored for the winter without being cleaned out by the bees, the number of included crystals is greatly increased, but still they are usually too small to be visible. Honey extracted only from newly-drawn combs usually granulates coarsely and is not so good to eat.

Rapid Granulation Gives Honey Creamy Appearance

When honey is heated, any crystals which it may contain are melted, so that the honey is then free of crystals. Without such "seed," later crystal formation is slow. It is a well known fact, for many other solutions as well as for honey, that when crystal formation is slow, the crystals formed are larger. This explains why honey that has been heated and later granulates is coarse without exception



Dr. E. J. Dyce.

and why honey extracted from newly drawn combs is usually inferior.

It might then be suggested that it is desirable for honeys that are to be sold in granulated form not to heat them, but in this plan lies a serious danger. If granulation is encouraged in honeys that have not been heated, the percentage of spoiled honey is unusually large. In several batches of honeys that were not previously heated, and which were caused to granulate quickly by the process to be described later, every lot of honey fermented within a short time, so preliminary heating seems essential.

Since heating removes included crystals which would, if left, have caused quicker granulation, the obvious step after heating is to put crystals into the the honey again. So after a honey has been heated to 160° F. to kill the yeasts, it should then be cooled as quickly as possible to a temperature which will not cause crystals to melt if a granulated honey is mixed with that which has been heated. Any temperature below about 80° F., or even slightly higher, will do for

this, but for working purposes a temperature of about 75° F. is about right. When this temperature is reached, there is to be added to the honey about five per cent of honey which has previously been caused to granulate quickly, or as we commonly say, previously processed honey. This "seed" must, of course, be honey which has been heated so that it contains no living yeast.

Best Temperature for Rapid Granulation

Having added the seed crystals in this manner, the honey is further cooled. The question now arises as to the temperature at which honey will form crystals most rapidly. A number of the books on beekeeping state or have stated that a fairly low fluctuating temperature is most favorable for granulation, a statement of rather obvious incorrectness. Other erroneous statements have also appeared about temperatures favorable to granulation. For such a physical phenomenon as honey crystallization, it would naturally be assumed that there is one temperature at which this process will proceed most rapidly. At any rate the old statements of the effect of fluctuating temperatures or low temperature have been shown to be wholly wrong by Doctor Dyce's experiments.

From an extensive series of tests, Doctor Dyce found that for almost all honeys a constant temperature of about 57° F. results in most rapid crystal formation. Every alert beekeeper will recall that 57° F. is the temperature at which bees form their winter cluster. It would be a serious strain on the imagination to surmise that any relationship exists between colony cluster formation and honey granulation, but it is made easier for the beekeeper to remember these two critical numbers because of their identity. For unusually thick honeys, such as a few that have been tested from the western states, a temperature one to two degrees higher may give increased speed of granulation.

Importance of Exact Temperature Control

The question now arises as to what effect a slight deviation from the optimum temperature will have, and Doctor Dyce's data give the answer. An increase or a decrease of two degrees often doubles the time necessary for complete granulation. When the temperature is kept at just the right degree, the result will be a container of honey that is "solidly" granulated in from two to four days, occasionally less than two days. If granulation takes as long as five or six days, because of the wrong temperature, the product is decidedly inferior, so that the most accurate temperature control is imperative for the making of a good granulated honey product.

The superiority of honey with minute crystals in it has been recognized in the work that has been done in grinding honey to make the so-called honey cream. When a coarsely granulated honey is ground in a suitable mill, the flavor of the honey is appreciably improved, but this process has the serious fault that millions of minute air bubbles are incorporated in the mass which cause a displeasing scum to form on the top of the container. Of course also unless the honey has previously been heated to destroy the yeasts, fermentation losses are often serious with the ground product. Without wishing to criticize the product put out by some of my friends, it can be stated without much fear of contradiction that a finely granulated honey which has granulated naturally and without scum on the top of the container is a superior product.

Beekeepers have sold their product chiefly in liquid form, apparently thus following the path of least resistance. They have often sold honeys that were rendered inferior by heating when the honeys were extracted or packed. It would be too long a sermon to attempt to point out all the things which beekeepers commonly do to their honeys which make them poor articles for the table, but a large part of the inferiority of the honey on the market arises from bad apiary or honey house practices. This work clearly shows that the heating of honey during extracting or later, without subsequent treatment to control granulation, is apt to be attended with heavy financial losses to the beekeeper, and there is no doubt that beekeepers lose thousands of dollars annually from the unwise use of heat with their honeys. Heating honey is a practice loaded with dynamite, and however long a beekeeper has used heat and however set he may be in his ways, anyone who uses heat with his honey should now stop, look and listen.

Through the generosity of Doctor Dyce, and loyalty to his university, this process and the product resulting from its use are being patented by Doctor Dyce and the patent is being assigned to Cornell University. Application for this patent has been made and the application has already

had its first examination, but the patent will probably not be issued for some time. As everybody knows who has had anything to do with patents, all of this takes time, but meanwhile the product and process are abundantly protected by the formal application for a patent.

The policy of the University with respect to granting of licenses for the use of this process is not yet fully determined, but it is certain that it will if possible be so used as to bring the greatest benefit to American beekeeping. Presumably some sort of licensing plan will be adopted, as a safeguard against improper use of the process and product, but whenever the time comes to issue such licenses they will be issued at a nominal charge, at least to honey producers, and will be withdrawn only in the event that a poor quality product is put out in the name of the process by one of those holding a license. Every effort will be made to insist upon only high quality products reaching the market under this patent. There is enough cheap and low quality honey already on the market without adding to the confusion by permitting inferior or coarsely granulated honey to go out under the invention which Doctor Dyce has made.

Through his affection to his college, from which he was graduated and by which he is now employed, Doctor Dyce is assigning his Canadian patents to the Ontario Agricultural College, Guelph, Ontario. Foreign patents have not been sought, and can not honestly be claimed by any other person than Doctor Dyce, since he is the sole inventor of the process.

If the maintenance of high quality under this process is not adequate explanation of the fact that the process is being patented, it may be further said that an important reason for making application for the patent was to prevent any other person from perjuring himself by making a dishonest application and thus getting a monopoly on the methods, as might have happened if application had not been made for a patent. With the patent in the hands of Cornell University, there will be no monopoly, and the process can be used anywhere in the country, so long as the necessary restrictions are met.

Doctor Dyce has made possible an important forward step in the marketing of honey. He deserves and will receive the thanks of beekeepers of his own country and ours for what he has done. It was a pleasure to have him with us at Cornell for two years and we were sorry when the time came for him to go back to his duties in Ontario. We wish him every possible success for his promising future, a wish in which a host of friends on this side of the invisible line between Canada and the States unite.

Ithaca, New York.

Forced Supersedure Stops All Swarming

C. A. Wood

Inducing Colonies to Rear Young Queens in Spring Prevents All Swarming In Comb-Honey Production

In using this plan it is advantageous to run for both comb and extracted honey. Colonies selected to produce comb honey must be strong in bees and brood and in two stories. If they are not strong, make them so.

First, prepare a colony for starting queen cells. Select a colony that produces show honey and graft the queen cells from it. Put these grafted cells in the colony that has been prepared for them.

The next day take the top story, which we call No. 2, off the colonies that are to be run for comb honey, together with the old queen, and set it on a bottom-board by the side of the lower story which we will call No. 1.

Grafted Cells Must Not be Over 24 Hours Old

Insert a Boardman feeder in No. 1. It will soon discover that it is queenless and will be ready to accept queen cells. Take one or two grafted cells not over 24 hours old, stick them on a cell bar, and put them in the middle of No. 1. It will be necessary to take out one brood frame to make room for the frame with the cell bar.

When I first began to use this plan, I gave sealed queen cells and they nearly always swarmed. It seems that unless the

colony really feeds the larvae and raises its own queen, it isn't supersedure at all.

In three or four hours after giving colony No. 1 the cells, place a bee escape-board which has the escape hole covered with queen-excluder zinc, on hive No. 1. Next put on one or two supers of extracting combs. One super is usually enough, but not always. On top of these place a queen excluder and then hive No. 2 with the old queen.

Colony Kept Together in Same Hive While Rearing Queen

You now have a queen-right colony again but the two stories, No. 1 and No. 2, are so far apart that the bees in the lower

Larvae from the colony which produces the finest comb honey are grafted into the artificial queen-cell cups for early queens.

story (No. 1) will go ahead and raise a new queen. If your colonies are as strong as they should be and you keep them supplied with feed, you will get as fine queens as it is possible to raise.

Dr. C. C. Miller once said that there is no limit to the number of queens one can have in one colony if they are far enough apart.

It is important that the colonies be fed during the entire time they are rearing their queens as there is very little honey coming in, part of the time none at all, at this time of year. Better queens are secured by feeding although the colonies may have plenty of sealed honey in the hive.

When the young queen has emerged, go through hive No. 1 and destroy any cells they may have started on the brood combs. Keep feeding until the young queen starts to lay and longer if necessary.

Preparing Colonies for Comb-Honey Supers

After the young queen starts to lay, take off hive No. 2 and the supers of extracting combs and shake off the bees in front of hive No. 1. Give the brood to colonies to be run for extracted honey or use for queen-mating nuclei. Do as you please with the old queen.

If you want increase, set No. 2 on a bottom-board beside No. 1 again, then when most of the field bees are out, set No. 2 in another location; when the field bees return they will go into No. 1.

Time your operation so that the young queen will begin to lay about the time of the beginning of the main honey flow. The eight-frame hive is well adapted to this plan. In 1928 my best colony operated in this way produced thirteen and one-half cases of fine comb honey.

Supersedure Plan with Old Queen

If you discover a colony starting to supersede its old queen early in the spring, put a division board in the middle of the hive and give a ripe queen cell. Be sure that the old queen is not on the same side as the cell.

The queen from the ripe cell will emerge about two weeks earlier than one from a cell that the colony has just started. Another advantage is that you will be requeening from your best stock. After the young queen starts laying, remove the division board.

When bees are taken from the cellar in the spring, they often drift badly. If a large force drifts to a colony that has an old nearly-worn-out queen, the bees usually supersede her before the main honey flow.

Colonies that have old feeble queens early in the spring, should be given a large force of package bees as early as possible and fed every day to stimulate egg laying. The old queen will soon lay herself out, then the bees will supersede her naturally. There must be enough bees to take care of the larvae and brood regardless of the weather; not merely a pound or two, but enough.

South Wayne, Wisconsin.

Beekeeping in the Chaparral of Arizona

Chauncey Alvin Brion

Producing Crops of Honey on the Deserts of the Great Southwest

Arizona has a striking variety of climates, land formations, and vegetation. In a few hours one may drive from low, dry, nearly-barren deserts to towering pine-covered mountains where sparkling creeks babble as they wind through rugged canyons and across grassy valleys where deer roam, where wild turkeys scratch among the pine-needles and squirrels bark among the trees. On the way a continually changing panorama of intermediate scenes is passed. As the traveler follows his way along the upward road, different plants and trees appear at the roadside, on the hillsides and on the mesas.

The Desert Supports Many Honey Plants

Of all the different types of country in Arizona, the desert is the most valuable to bees and beekeepers. This may seem

Mesquite tree. One of the two most important desert honey trees.

strange, for the word "desert" brings an impression of desolation to most people.

As the word is commonly used it covers a wide diversity of climates and vegetation. A desert may be anything from a barren worthless waste land to a thick growth of chaparral which is not desolate at all, for it has a bountiful supply of wild life—much more than its share. Hardly a minute can pass without some sound to break the solitude. Quails call in the mesquite thickets, doves mourn on the branches of the trees, and various desert

Catsclaw tree which shares first place with mesquite as a desert honey plant.

song birds sing and chirp from anywhere and everywhere. At night insects fill the air with harmony, or whatever it is—it may be just a noise. About 2 o'clock in the morning the coyotes begin their discordant yelping and howling, which continues until daylight discourages them from proclaiming their presence so plainly.

The higher, hilly sections of the desert usually offer the most productive locations for beekeeping because they have a greater variety of honey and pollen plants and more rainfall. The slightly cooler climate of the hills also makes the beekeeper's work more pleasant, and, if he is like the writer, a little contrast in natural scenery is an attraction by itself. The honey from the hills has a somewhat better quality, and quality is supremely important in these days of high production and fast competition.

Late in the winter (which truly is spring on an Arizona desert) a score or more ground plants can be found in bloom at the same time. Some of them furnish nectar; most all of them supply pollen. One alone would not amount to much, but, taken all together, they are valuable for early stimulation.

Most Honey is From Shrubs and Trees

The most reliable and productive honey plants of the desert are shrubs and trees.

Palo Verde tree.

The first effective shrub to blossom on the hills is what is usually called the "wild currant." This plant supplies nectar in February. The first blossoms of the wild currant bushes mark the beginning of extensive brood-rearing, and the beginning of the active season for the bees and beekeeper. There is a steady hum about the apiary as the bees fly to and fro, from the hives to the blossoms and back.

The apiarist becomes enthusiastic, for there is something exciting about the first activity of the bees. In the course of the year's events, it takes second place only to the beginning of the surplus honey flow. After three or four months of idleness the beekeeper is eager for work among the bees in the yard. The first day of yard work in the spring is a joyful day in his life if he does not find too many dead colonies. The first trip to an outyard is more eagerly undertaken than a fishing or hunting trip.

After the wild currant blossoms have fallen, the creosote bushes and arrow weeds come into bloom. The arrow weeds grow along the rivers, so they are not as important as plants of wider distribution. In favorable locations, they may yield a little surplus honey which has a good flavor and color. The arrow weeds have white unisexual flowers. The bees work mostly on the pistillate flowers.

The creosote bush, commonly known as greasewood, grows on dry hills and mesas. It seems to be able to live on less water than the other desert plants, as it flourishes in the driest places. The creosote bush furnishes both nectar and pollen. Though this plant yields no surplus honey, it is useful to the apiarist; it gives worthy service by nourishing the larvae which a few weeks later become the bees that gather his crop from the main honey plants.

Four Important Desert Trees

Of the four desert trees, the first to blossom is the palo verde. The name is Spanish for "green wood." The trunk and

Ironwood tree with creosote bush in left foreground.

branches of the tree are pale green in color, which accounts for the origin of the name. The flowers of the palo verde trees paint the desert yellow for a while, and give it a month of glorious, surpassing beauty—the brightest and most delighting month in the desert's year.

If the season is too fast, some honey may be stored from the palo verde honey flow. Twenty or thirty pounds may be expected in a good season. While the honey is not rated as the best, it passes as a good table honey, and there are same people who prefer its flavor to all others.

Some time near April 20 or a little later, yellow catkins appear on the two most important honey trees of the desert, mesquite and catsclaw. These are closely related members of the same species. The catsclaw tree has a more bushy habit of growth than the mesquite, and has curved thorns from which it takes its name. The mesquite tree has straight thorns, longer blossoms and longer leaves. The nectar flow is heavy, fast and short.

Arizona's finest and most delightful honey comes from the catkins of these two trees. Catsclaw honey is considered slightly the better of the two for both flavor and color, though one can hardly be told from the other even by a beekeeper.

The last of the four desert trees is the ironwood. While this tree resembles mesquite and catsclaw in general appearance, its purple flowers which are similar to those of the common garden pea, set it apart in a separate species. Since this

Palo Verde tree with cholla cactus at right.

tree does not stand cold weather, it is not as common as the others. According to the writer's experience, it is an uncertain source of honey.

Nectar and Pollen from Cactus

There are three species of cacti which contribute to the support of the bees. The first is the prickly pear, a minor honey plant, which is probably most important for its pollen. The honey blends with that from other sources. In the fall the bees gather the juice of the prickly pear fruit after the birds and animals have pecked and gnawed it. This may save some colonies from starvation.

Late in spring or early in the summer (desert seasons do not always run on time) circles of large white flowers cover the tops of the giant sahuaro cactus, appearing like crowns; and perhaps the sahuaro is worthy of the crown. It is in truth the most stately and imposing of desert plants, a king among them though not a king of honey plants. Yet the sa-

Prickly pear cactus with sahuaro cactus in the background.

huaro might be a good yielder of nectar if it were not for the fact that its flowers close about four or five o'clock in the afternoon and do not open in the morning until the rays of the sun have warmed them, about nine o'clock. The economy of the hive does not favor an eight-hour day. It does not work very well for nectar gathering and honey making. The bees stand against short working hours, but they are strong for daylight saving time.

The last and most important of the cacti is the cholla, pronounced "choya." These cacti grow in thick clumps on flats and mesas. They are sometimes called "jumping cactus." However, they do not jump, but small branches often fall on the ground, especially in dry weather; and as a person walks among them, the edge of the heel or sole of the shoe sometimes strikes the thorns of the branches on the ground, causing them to fly up and stick on his leg. The chollas blossom in the summer (the blooming period may vary over a month) and produce a dark, reddish, opaque honey, which remains liq-

uid for a long while. It is a good table honey, though not so good nor as easy to sell, as that from the desert trees.

If sufficient summer rain falls, wild flowers cover the ground again in the autumn, but not as profusely as in the spring. From an offensively scented perennial known as rabbit brush or rayless goldenrod, the bees gather a part of their winter stores—honey with a flavor more disagreeable than the odor of the flowers

View of desert apiary. The shade is covered with arrow weeds.

that yield it, but just as good as the best for growing bees. A disagreeable diet surely is not conducive to human agreeableness, nevertheless it does not seem to harm the bees at all. If there is enough of it, they are just as gentle as those that live on the most pleasing catsclaw honey.

Various Moods of the Desert

Among climates, the desert is unique for changeability. One week it may be a place of delightful beauty, smiling through the songs of birds and the fragrance of flowers; then hot winds blow and the sun shines with scorching rays; and before another week has passed the flowers have withered. Faded and dry, they cover the ground beneath the trees and hang shapeless from their branches; the song birds have flown away to the mountains, for song birds must sing, and they can not endure a distressing place. It is fortunate for them that they have wings.

Or perhaps the desert is a dull grey, appalling place to start with, a fit habitation for Gila monsters and rattlesnakes, with no vegetation on the ground and the trees leafless and brown after months of drouth. Dark clouds may appear at the horizon most likely near the close of day, and, growing darker each moment, drift over the flats and hills covering them with a gloomy shadow whose very gloom is an auspicious omen of happy fortune. Meanwhile, thunder rumbles and crashes, and blinding flashes of lightning instantaneously illuminate the awful clouded sky and the darkened land. Large drops of rain begin to fall, slowly at first, then faster until it seems that the clouds, the reservoirs of the atmosphere, have been split asunder and are pouring all of their water on the thirsty soil at once. Water runs on the ground, flowing into gullies and into "dry washes" which soon become raging rivers. Even in its darkest moment, the storm brings a feeling of

At the close of the busy season the beekeeper may follow the winding roads to the forested mountains where rainbow and mountain trout wait in the rippling water and watch for luring flys.

exhilaration to the desert beekeeper, for he knows its transforming power.

After the storm has passed, the sun seems to shine with milder rays. A few days slip by and the palling grey color of the desert changes to a soft green soon tinted with yellow and purple.

A person who looks upon the desert in this aspect does not see it as a place to be feared, but as one of impressive beauty. Its attraction was wrought by a change of color. Of colors, green is Nature's favorite, and one through which she works

a quieting and gentling influence. The shade of green that cloaks the desert after a storm is a soft fresh shade which typifies new growth and reflects vitality.

If it were not for lack of rainfall and uncertain weather, the desert with so many honey plants might be a beekeeper's paradise, which it surely is not. It takes good beekeeping to make a profit on the desert, where Nature is so prone to assume a cruel mood, and where living things must face a great, sometimes overwhelming, handicap. Water is a worthy symbol of life. Thirsty vegetation can not secrete nectar, like that which is well watered. If winter and spring rains do not come and come at the right time, there may be a short crop, or perhaps none at all.

It is unfortunate that the two most productive honey trees of the chaparral have flowers of the catkin type which are so sensitive to atmospheric conditions. A little wind or a little rain at the wrong time can blow or wash away the hopes of a year.

The desert beekeeper is a gambler who wagers his capital and his time against the seasons, while Nature deals the cards. Perhaps that is one reason why he clings so tenaciously to his job.

Chandler, Arizona.

Problem of Advertising Honey Profitably

H. E. Coffey

Enormous Waste of Money and Time in Advertising That Brings No Return

For half a century, beekeepers have striven to increase production of honey. The most lucrative nectar yielding fields have been sought out and carload producers have become common. But increased production has not proved to be the magic wand to mysteriously open the house of golden treasures. This commonly recognized truth now causes us to wave our magic wand in another direction. Advertising, we say, will do "the trick"; and one bee journal even adopts the slogan, "Promote the use of honey through advertising."

There is perhaps a more general ignorance about this advertising problem than concerning any other subject that pertains to the beekeeping industry. Through ignorance of the fundamentals of advertising some years ago a creditable sum of money, representing one of the most hopeful efforts ever made toward national producer co-operation, was fruitlessly dissipated. This experience is comparable to that of a New York manufacturer who, wishing to break into the markets of Brazil, had an eastern advertising agency prepare a series of advertisements in Spanish to be run in Brazilian newspapers. Results were nil. Why? Because Brazilians speak and read Portugese. We can now see how much more worthwhile had those early efforts at advertising honey been more along the lines of the American Honey Institute today.

Enormous Waste in Ineffective Advertising

Readers may be surprised when I state that thousands of dollars are being spent yearly by beekeepers of America on advertising from which there is no possibility of compensating returns. Some simple examples will serve to illustrate the meaning of this statement. The majority of grocers in the Texas Panhandle and their trade do not like honey from a certain source. The grocer usually pays cash for honey, but producers of this certain honey leave it on consignment even when the store is well stocked with other and more preferable honey. The honey left on consignment in many instances granulates and ferments before it is sold and many packages have to be taken up by the producer when he makes his return visit to collect. Not only does he receive a reduced price for his honey, but numerous other losses must be added which other producers do not have. There are ways to overcome these expenses.

Take another instance: Producers of a given locality harvest several grades of honey. By marketing only their best grade in a given territory they build up a splendid reputation for this honey and at good prices. Later they destroy their playhouse by shipping an inferior grade of honey under the same label.

And another instance, thousands of beekeepers are continually going to much ex-

pense to create a demand for honey and failing to keep that demand supplied throughout the year. Yet numerous other examples of advertising waste could be given which will never yield returns to anyone.

Before starting any undertaking it behooves us first to sit down and count the cost. If we are not competent to know how best to proceed in advertising, it would be much to our financial gain to realize this quickly before taking expensive steps.

But beekeepers are not alone in their ignorance of advertising. A well known manufacturer of shaving cream, who had made a success in merchandizing his cream, decided to produce and market men's talcum powder. After spending $38,000 in advertising the powder his effort was dropped for no results were obtained. How much to his gain had this manufacturer heeded the advice of a research man who had made a careful analysis of the market and advised against the advertising campaign.

Need of Expert Advice on Merchandizing Honey

Here is a truth well known to the advertising specialist, "In advertising there are no factors of minor importance." It is because beekeepers are overlooking apparently minor details that they are not everywhere having maximum success in honey sales. What seems to be an important need just now is expert advice on honey merchandizing. A call on six grocery stores handling honey in any good size town will usually impress the reality of this need. Experts on advertising and merchandizing of honey for each state or group of states who had made a systematic study of the problems before us could be of most valuable assistance in giving judicious and effective advice to all who sell honey in every locality. Each individual and concern could be advised at small individual cost on how best to advertise and merchandize the honey he handles with the means at his disposal.

One must have had long experience and have made most careful study of the wants and fancies of the average man and woman and the factors which influence their buying before he is capable of giving really valuable advice in this line. By merely changing the color of the can, one talcum manufacturer quickly increased his sales, for the color he had been using did not appeal as well to women buyers. Honey producers every year go to the expense of having individual honey labels designed and printed without considering carefully how the label will appeal to the buying public. On numerous points, correct advice would be most valuable.

Through the columns of Gleanings in Bee Culture you have been informed about the "battle of sweets." We may think we know the good points of honey; but before we are capable of knowing best how to meet competition, we must also know well both the strength and weakness of the enemy. Neither can we do most effective advertising as a disorganized mass. Proper leadership and well directed effort is the only means of putting honey on top.

Many of us view advertising as a great gamble. Indeed, immense sums have been expended in advertising with no certainty as to results. Such haphazard methods continue but they are decreasing. No longer are the more successful advertisers firing at random, but accurate, well-placed shots are the rule. The successful advertiser today knows well in advance what results to expect from future advertising.

If honey is ever to be advertised on a national scale in newspapers and magazines, those undertaking this expense must know in advance that this investment will yield a profitable return. No food distributor today would be foolish enough to undertake such advertising of honey until ways and means have been devised to make it profitable. I believe it will be sometime yet before that magic wand which has in recent years been waved toward advertising will be able to unlock for the beekeeper that treasure chest uppermost in the desires of every creature.

I have attempted to present this problem of advertising in such a way as will lead the producer to seek his own solution in a sane and safe manner. No individual beekeeper, no matter how well informed along the lines of advertising honey, should be presumptuous enough to offer a complete solution of the problem as it applies to every section of the country. However, I do take it upon myself to offer a few suggestions which may be helpful to some here and there in working out a solution of their own advertising problems and the general problem as a whole.

Effective Ways of Advertising Now Available

Since honey is not a standardized food-

stuff of the food factory, or processing plant, that sales appeal which reaches the consumer from nearest the source of production and most directly seems most effective. Beginning with his own home town the average producer should find local advertising in his own community paper most remunerative with the advantage that, many times, such advertising can be bartered for with honey. Advertising by means of attractive roadside honey stands, in most cases, pays splendid dividends. A producer of cotton honey in central Texas obtained splendid returns from a small expenditure for radio advertising over a nearby station. A neighbor producer this year found that the purchase of a new truck attractively lettered greatly increased his sales.

All these and many more things the producer can do to advertise honey in his own range of selling territory. He can go a step further in telling the housewife how to use honey by having recipes printed on his honey labels, by distributing honey cook books, etc, but most effective advertising along this line must come through co-operation with other producers through such an institution as American Honey Institute if the use of honey in cooking is really to be made popular. There must be entire confidence in the source of the information. For such free advertising as food corporations, like the Kellogg Company are giving honey, the beekeeper should gladly reciprocate. By so doing he is encouraging the continuation of a most valuable favor in advertising.

Nationwide Advertising Not Now Available

For reasons familiar to most producers it may never be possible to advertise honey after the fashion of certain breakfast foods, baking powders, etc. Constructive honey advertising will have to be built along different lines than that. In the building even the most humble beginner who discovers that the live bee exhibit or the attractive display of comb honey has value beyond the price of printers' ink in the most costly publication, is a most needed and necessary workman. I trust that arousing producers to consciousness of the peculiar nature of the honey advertizing problem will eventually lead to its complete solution and to a stable demand for every pound of this most wholesome sweet that we can induce our winged insect servants to harvest.

Whitsett, Texas.

Sack Cloth and Ashes

E. R. Root

Disappearance of Sweet Clover in Some Regions and Diseases of Sweet Clover in Others

Sweet clover. Has it no drawbacks? Or, is there a fly in the ointment? For the last three issues of this journal I have been telling about the romance of sweet clover; of its on-rush through the lime belts of the country; of how it has now become the chief cornerstone of the beekeeping industry in many parts of the United States and Canada; of its drouth-resisting qualities, so that cattle and bees can find abundant pasturage during seasons when all other crops fail. I have shown pictures of sky-scraper colonies—hives seven stories high, filled with sweet clover honey and brood from top to bottom in a season when drouth had killed out all other sources of honey. In this issue again I am showing more pictures of this sort.

The story is indeed amazing; two and three hundred pound averages in some sweet clover areas during a season of drouth is unbelievable. It can not be and is not true for all sweet clover areas; otherwise the beekeepers of the country would be rushing to some sweet-clover pasturage like the early Forty-niners rushed to California for gold they did not get.

Sweet Clover Injured by Disease

Now, dear readers, if I have left you on a high pinnacle of expectancy from which you can see only a land of milk and honey, and "good times just around the corner," it may be my duty to give you a little jolt—possibly two or three of them. Nowadays we are getting used to jolts of all sorts. Do not get scared if I tell you the solemn truth. The government men have been telling us about a sweet-clover dis-

Root Company apiary in northwestern Ohio where sweet clover is abundant. This is evident by the height of the tiered-up hives.

ease or several of them. See Gleanings in Bee Culture, March, 1931, page 157. Didn't see it, did you; and if you did, it did not worry you much.

You will remember that in our November issue I told you about the sweet-clover bee paradise in northern Kentucky, where in 1915 hundreds of tons of sweet clover hay was produced; of bees by the thousands of colonies feeding on this sweet clover; of how one little town, Falmouth, used to ship out 100,000 pounds of sweet clover seed every year. See pages 680-683 of the November issue. The pictures tell the story.

Disappears in Two Important Sweet Clover Areas

Now, what are the facts for 1931? Last fall, I drove all over this same county. The sweet clover that was, is all but gone; there are but few or no bees, and no sweet-clover seed is being shipped out any more. I said to John A. Sheehan, of Falmouth, Kentucky, who formerly shipped out sweet clover seed by the carload:

"Do you send out any seed now?"

"Not a pound," was his laconic answer.

"Why?" I asked.

"Because sweet clover is gone or nearly so," he replied.

Again I asked, "Why?"

Again came back the answer, "I don't know."

I had learned in the meantime that in the famous Black Belt of Alabama and Mississippi, where sweet clover was so abundant and from which so much sweet clover seed was shipped ten years ago, the legume is now conspicuous by its absence. Said Clifton Weaver, whose brother, Joe, lives in that territory, "Sweet clover has almost disappeared."

When I learned that sweet clover had all but gone from two of the greatest sweet clover sections in the United States, I began to get frightened. What if sweet clover should disappear in the same way from northwestern Ohio, eastern Indiana, Michigan, Wisconsin, Minnesota, the Dakotas, and the Rocky Mountain Regions?

Another Root Company apiary in sweet clover territory. Note that the hives are placed among the shrubs and small trees in such a way that they are protected from cold winds in the fall, spring and winter.

Wow! The mainstay and principal source of white table honey in the United States would be gone. White clover had been almost wiped out by two seasons of drouth. I felt like dressing in sack cloth and ashes and like Jonah of old, ask God to let me die. I told my associates at Medina a doleful story.

I had already had a talk with Professor C. J. Willard, agronomist at the Ohio State University and probably one of the greatest authorities in the United States on sweet clover. It was he who had already told me about sweet clover diseases, and when I found that the legume had all but disappeared from Kentucky a cold chill went down my back.

I wrote Professor Willard after having gone over the Kentucky hills. I explained that where sweet clover was once so abundant, alfalfa, tobacco, and corn, had taken its place. I also added that I found no sweet clover along the roadsides as formerly. In reply he wrote under date of September 23d, as follows:

"The situation which you found in Pendleton County, Kentucky, is certainly interesting. In a livestock country, sweet clover tends to give place to other forage crops except where it is systematically used for pasture. If they have found it possible to grow alfalfa in that county, that might help to explain the decrease in sweet clover, though why it should completely disappear, I can not imagine.

"The repeated mowings which are given the roadsides in the state highway system would effectually eradicate sweet clover both in the first and second year. I have noticed in traveling about the country that there is very little sweet clover on the sides of the main roads any more, and I am sure that the repeated clipping is responsible for it."

These tiered-up hives show what sweet clover in connection with food-chamber management will do even in an ordinary season.

I also wrote Professor J. A. Munro, State Entomologist, and instructor in beekeeping at the North Dakota Agricultural College, inquiring whether sweet clover was disappearing. He wrote on November 9, as follows:

"I am not aware that a disease is causing the destruction of sweet clover. I have always regarded it as the most vigorous and healthy of plants. It appears to thrive under very adverse conditions but does not seem to succeed in reseeding itself in an exceptionally dry year. I believe that accounts for any reduction in acreage of the plant at the present time. As you will recall, this section of the Northwest has had a good deal of drouth the past two or three years and it has had a telling effect on the acreage of sweet clover in some localities."

These agree substantially with what John A. Sheehan and others in Kentucky

A Root Company comb-honey apiary in northwestern Ohio. Woods on the north and west provide a natural windbreak. The south side is exposed to the sunshine.

and in the Black Belt in a position to know have told me.

Killed by Frequent Cutting Along Highways

It is surely true that sweet clover that is continually cut along the roadsides will finally die out. It is also true that alfalfa and other crops probably would be more profitable—especially tobacco. I am told that this old sweet-clover area of Kentucky grows the very finest tobacco in the United States; that it is a very profitable crop. Sweet clover is a biennial and alfalfa is a perennial. That means when it once gets a start in the soil it continues year after year. All that is necessary is to cut it three or four times a year. Sweet clover, if run for hay, must be planted every two years, and the second-year hay is by no means equal to alfalfa hay.

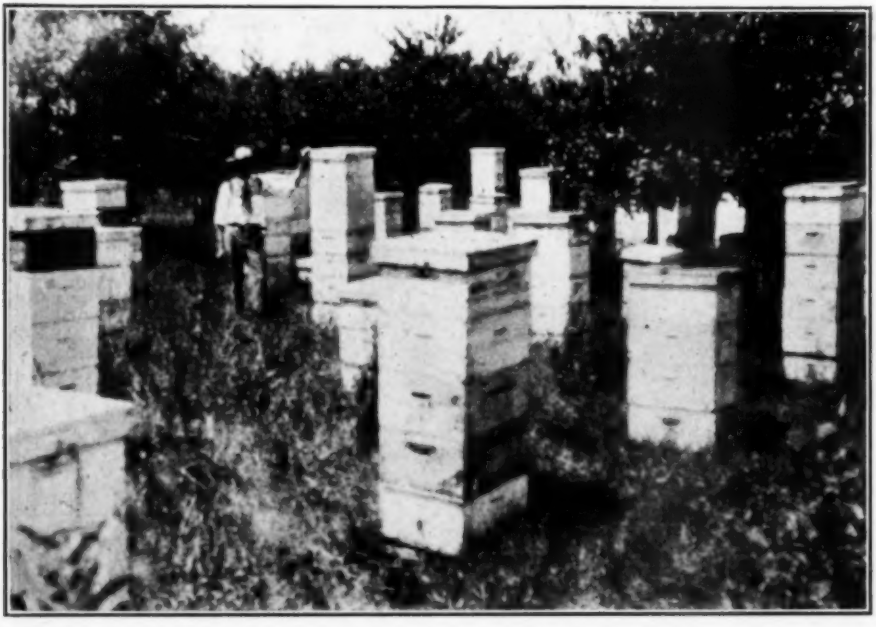
As to corn—it is significant that it would not grow on these hills until sweet clover had prepared the soil. The same is true of alfalfa and tobacco. As long as these crops are more profitable, the farmers will not replant sweet clover. I am told that the same conditions are prevailing in the Black Belt of Alabama and Mississippi and for the same reason.

Why It Will Stage a Comeback

We may safely conclude that it is the rotation of crops and not disease that has caused the demise of sweet clover in the two erstwhile great sweet clover districts of the United States. It is probable that sweet clover will come back in these two sections of the country, not for hay, but for pasture. Dry weather conditions or drouths will force its reintroduction because the farmers all over the country are learning that, on account of the long, deep roots of sweet clover penetrating two to six feet down into the ground where there is moisture, it will grow and thrive as a pasturage when the dry top soil would kill out anything else, especially white clover, which requires a wet top soil. The drouths are, therefore, a blessing in disguise in teaching farmers to put in sweet clover for dependable pasturage.

Remember, it is sweet clover pasturage for cattle that makes long and continuous bee pasture until frost. When sweet clover is grown for hay, it is cut too early to be of much value to the beekeeper.

No, I am not ready to keep on my rags of sack cloth and ashes. To change the figure, I see a silver lining in these drouths. However, beekeepers everywhere should be on the watch for sweet-clover disease. If irregularity is found it should be reported.



This and other pictures in this article show the value of two-story management in the spring with each colony supplied with an upper story of honey during the building-up period in sweet-clover territory.

A Completely Equipped Extracting Outfit

G. A. Pauli

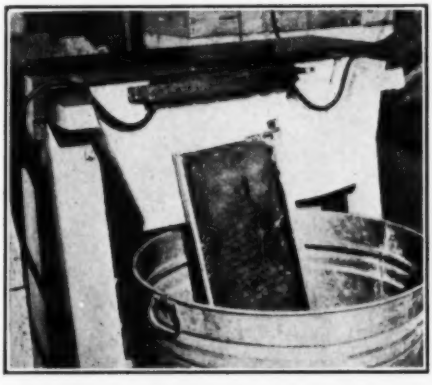
How Well-Arranged Machinery and Equipment Can be Made to Save Time and Money

While nailing up some shipping cases recently I was hitting the nails quite hard because I was in a hurry. My boy, six years old, standing at one side watching, said: "Daddy, I would hate to be one of those nails." I asked him why and he replied: "I would sure go in crooked!" Like my boy, I, too, fear that I might go in "crooked" in describing contrivances of my honey house, so I shall try to hit on those points only that may be of interest to the readers.

The Uncapping Outfit

As the honey is hauled home from different yards for extracting, the truck is run into the extracting room where the supers are unloaded in convenient piles around the cappings box. This box is 2 feet wide, 5 feet long, and 18 inches deep made of 20-gauge galvanized iron. A wooden rack is placed in the bottom of this box and supports a galvanized screen of ¼-inch mesh.

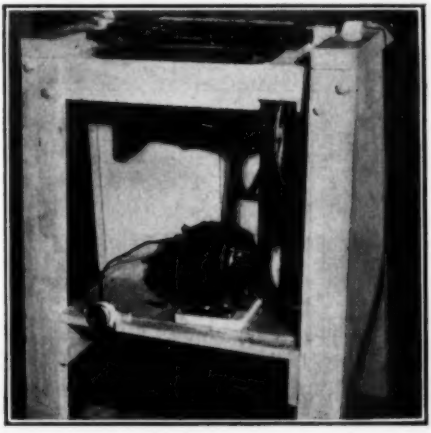
In the past the uncapping has been done over this box with ordinary steam knives, but this season I am using a machine for uncapping that I have built by hitching a steam knife to the head of a sewing machine, inverted, and mounted on a stand. This machine is run by a 1-6 H. P. motor, driving the knife at a speed of 1150 strokes per minute, the strokes being ⅛ inch. As all superfluous parts are removed from the sewing machine head, it runs easily and quietly in spite of its high speed, and uncapping is made easy by its use. A small dolly or truck, made by mounting heavy casters to a hive bottom, is very useful in moving piles of supers to the uncapper.



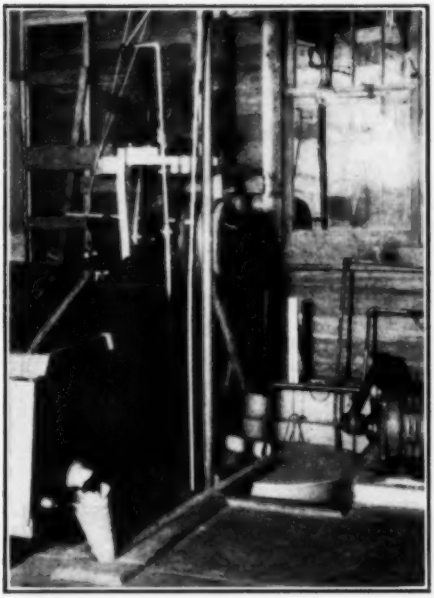
The steam-heated uncapping knife vibrates at the rate of 1150 strokes per minute.

Tank Located in Pit Receives Honey from Extractor and Uncapper

As the honey leaves the extractor, it accumulates in a tank 30 inches in diameter by 22 inches high, located in a pit below the level of the concrete floor. When this tank is about three-fourths full, the pump, which is also located in the pit and connected to the tank, is started and timed to pump the honey as fast as it is extracted and no faster. The pump can be run at two different speeds. By running at 28 revolutions per minute it will deliver 530 pounds per hour, and by running at a speed of 38 revolutions per minute, it will deliver 725 pounds per hour. By regulating the speed of the pump there will always be honey in the tank until the end of the day, and no air will be introduced into the honey by the pump running empty. The honey from the cappings as they drain over night in the cappings box, is



An old sewing machine head mounted upside down and operated by an electric motor drives the uncapping knife.

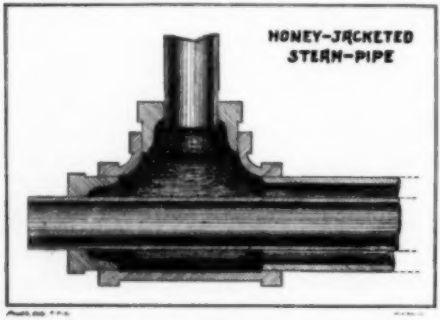


A tank located in a pit receives honey from the extractor and draining box. A pump, also located in the pit, forces the honey upward to the settling and straining apparatus.

also piped into this tank.

Warming Honey Before Straining

From the pump the honey is forced through the warming pipes where it is warmed to 140° to facilitate straining and settling, prevent granulation, and possible fermentation. These warming pipes are made by running a 1-inch galvanized iron pipe inside of a 2-inch galvanized pipe and connected up by standard pipe fittings as shown in illustration. Steam is run through the 1-inch pipe, while the honey that is being warmed runs between the 1-inch pipe and the 2-inch pipe.



Detail of fittings by which honey is heated before being delivered to the settling tank.

This makes it a honey-jacketed steam-pipe instead of a steam-jacketed honey-pipe which we often hear about. For years I used the steam-jacketed honey-pipe, but was never satisfied with the results, as the honey, when it came out, had a cold "core" and was heated only along the surface, next to the hot pipe, as it slid through. The center part of the honey received no heat and slid along on the thin, hot honey as a cold core.

With a honey-jacketed steam-pipe the results are different. There is no core as all the cold honey will adhere to the outside pipe and let the warm honey flow out first as it has less friction. When the honey comes out, it is of an even temperature throughout and it takes less steam as none is wasted. The steam is easily regulated by a ¾-inch valve that has graduations. Any plumber or pipe fitter can put this pipe together, or you can do it yourself if you have tools. Near the outlet of this honey warming pipe is a dairy thermometer, also a thermostat that helps to keep a check on the temperature of the honey and gives alarm by ringing an electric bell if the temperature of the honey is off too much.

A Settling Tank Removes Most Particles of Wax.

Leaving the warming pipe, the honey enters the primary settling tank which

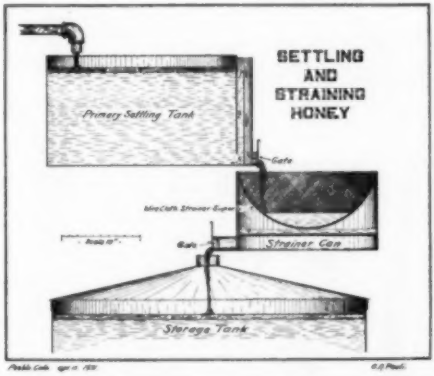


Diagram of settling and straining apparatus. The baffle plates in the settling tank hold back larger particles of wax before honey enters the strainer.

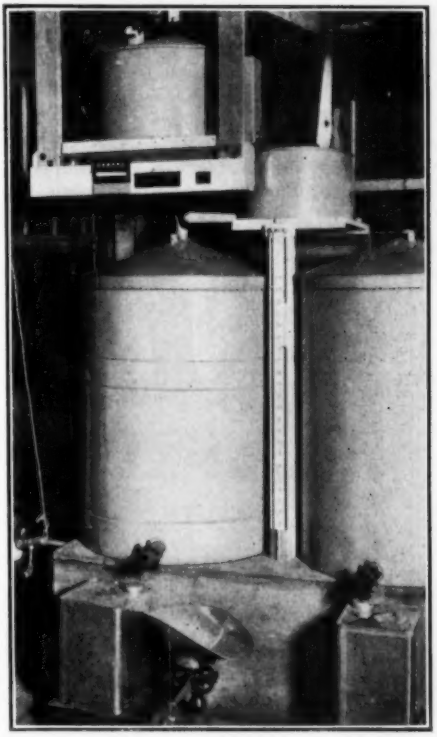
works on the same well known principle as the wax-separator. All larger particles of foreign matter and particles of cappings, melted or solid, will come to the top of the warm honey. When the honey comes to within 2 inches of the top in this settler

it automatically begins to enter the strainer can, but only honey from the bottom of the settler will enter the strainers and only as fast as it is pumped from the tank below. Inside of the settler as well as the tanks are floats of thin boards for the honey to fall on to keep down agitation and help along the process of settling. An extra gate is provided to drain the settler.

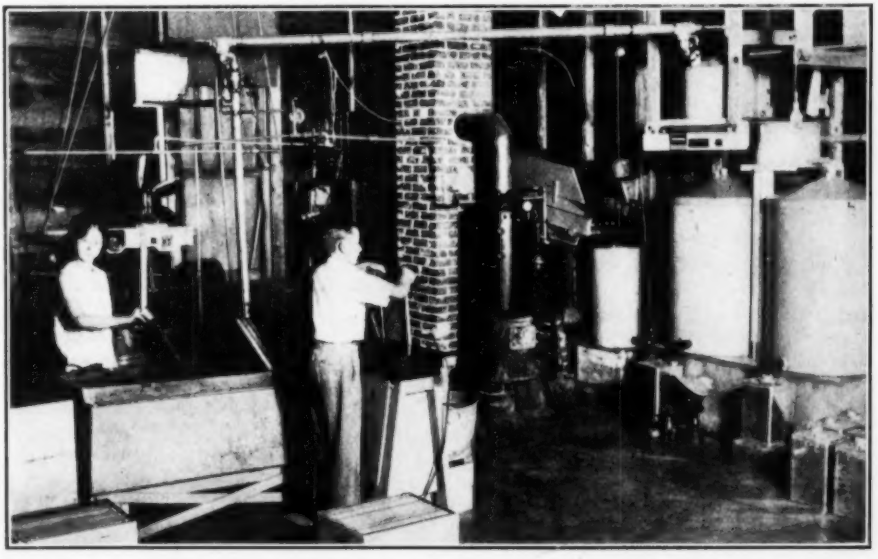
The strainer can is 11 inches high by 18 inches wide, and contains a medium and a fine strainer cloth, each resting separately on a galvanized fine mesh screen wire cloth. The coarser strainer retains the larger particles while the fine strainer cloth retains the more minute particles. As a matter of fact, the strainers have very little to do as the honey, after it goes through the settler, is almost free from solids, even more so than honey that is found on the market. It is never found necessary to change strainer cloths during a day's extracting, and I have run two days without clogging.

From the strainer the honey enters the storage tanks, from which it can be drawn off into containers while still warm. A steam coil is embedded in the concrete stand under the storage tanks and also under the tank in the pit. This is for emergencies only in case that the honey should become too stiff to handle.

On all tanks, including the one in the pit, and the strainer can, there are gages

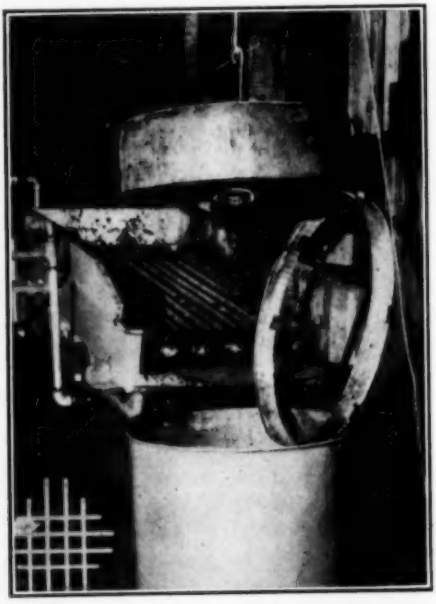


The settling tank and strainer are located above the storage tanks. From the strainer the honey flows into one of the large storage tanks.



General arrangement of extracting apparatus. The boy is operating the uncapper, while the young lady is loading the extractor which is at her back. The pipe from the honey pump to the settling tank, the horizontal portion of which contains a steam pipe, is shown overhead.

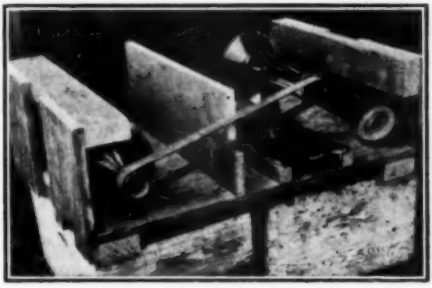
which indicate how much honey they contain. When they are filled to their capacity, these gages make a contact with an electric bell which sounds the warning and turns on a certain signal light which indicates just where or what the trouble is. There is a different light bulb for each gage, and the thermostat, all grouped on a small panel below the settling tank. During the past eight years I have been using a bell alarm system in this way and find that it saves a lot of honey from running over, saves a lot of time in cleaning up the mess, and helps to keep a person good natured.



Cappings melting apparatus. A cake of wax is being lifted from the tank by means of a rope and pulley.

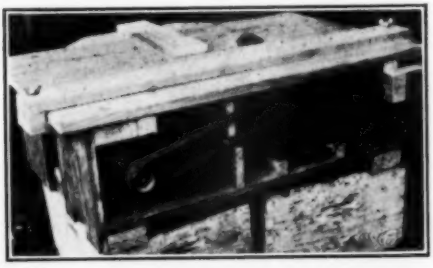
How Cappings Are Melted

I have tried many ways and built a number of melters, to efficiently melt the dried cappings and at the same time secure all the honey in a marketable condition, but I have mostly met with poor results. One year I stored away the cappings in boxes and barrels to be melted up in the fall when I would have unlimited time, but never again. The melter that I am now using gives better satisfaction than any that I have tried. It is an ordinary Root-Peterson capping melter with a steam coil suspended into it located 2 inches from the bottom. After the steam passes through this coil, it enters the space between the double bottom where it condenses. The whole thing has a forward slope of 2½ inches per foot, so the melted wax and honey will run off easily. Side boards 12 inches wide are put on so that lots of cappings can be piled in on the top of the steam coil. There is no clogging up of this melter. The wax and honey literally pour from it, forcing along all solid matter in the cappings. After this melter is loaded and steam is turned on, it will need no attention until empty.



The head of an old sewing machine is here used for a saw mandrel.

As the melted mass of cappings pours from the melter, it falls on a ⅛-inch mesh galvanized screen wire strainer, shaped like a hemisphere and fitted in the top of the tank which holds the wax and honey. When the cappings are all melted, this strainer is removed and emptied while the settlings are still hot. A long eye bolt with a large washer and a nut screwed on the lower end is suspended through the center of the melted wax in the tank. Next morning a rope is attached to this eye bolt, and with the aid of a pulley in the ceiling the cake of wax is easily pulled out and the bolt removed by unscrewing the nut. The honey from this melter is of a better quality than from other melters that I have used as it leaves the melter as soon as melted. This honey is sold to the bakers



The sewing-machine buzz saw outfit complete.

or it is fed back to the bees in the fall. I have wintered bees on this honey with good results; the only time I had any trouble was when I did not feed enough.

Fan Keeps Extracting Room Comfortable

The boiler used to supply the steam is a small dairy boiler of the 13-flue size and is plenty large. I have found that a fine coke, known to the trade as by-coke makes the best kind of fuel. It is absolutely sootless and smokeless and consequently the flues do not need cleaning very often.

On hot days in summer, most extracting houses are hot places to work in. This is overcome by a large fan, driven from the extractor shaft which forces a strong current of air over the room.

A concrete floor with a glossy finish is very desirable as it promotes cleanliness. After the day's extracting, water is applied to the floor with a hose, and all traces of honey that has been spilled and tracked are washed away through the floor drain when everything is fresh and clean again for next morning.

At the end of the season the supers are stored away in one end of the room in piles 13 or 14 supers high. This is done without much effort with the aid of the super hook as shown in the illustration. In the January, 1930, issue of Gleanings I gave a description of the super hook. A large number of supers can be stored in a small space in this way.

A few words about the work shop would probably not be out of place. This consists of a well lighted room, with a heavy bench along the row of windows. Here hives, frames, cases, etc., are nailed up or repaired, frames wired, and foundation put in. Among the tools that you may find in the work shop there is an assortment of carpenter tools, blacksmith tools, pipe fitter tools, and some from half a dozen other trades. One of the most useful implements in the collection is a little circular saw that I put together from another sewing machine head that was laying around and a few boards that I had. A 1-6 H. P. motor does a good job pulling this saw, having a 6-inch saw blade.

Pueblo, Colo.

Empty supers are piled away by means of a super hook.

Outside, at the end of the day's work, the boys decide to liven things up a bit.

1932.

The year 1932 is here. The world has been waiting for 1932 many billions of years. Now that it is here what are we going to do with it? The first thing we do is to tear our old calendar from the wall, roll it up and throw it into the waste basket. The calendar is all right; we have nothing against it but we are through with it, that is all. Like the year it represents, we are through with that too and would not call it back if we could. A lot of new calendars come in the mail. We hang up the one that best suits our needs.

In the mail that comes with the new year is the family almanac. As we turn the pages, our eyes fall upon the picture we have seen ever since we can remember. It is a picture of a man, who, in unbuttoning his vest, went one layer too deep. This almanac tells us to take a lot of concoctions to cure what ails us. Tar will cure numerous ailments. Now isn't tar a fine thing with which to gum up your innards?

It seems strange to me why people take some sort of dope to cure them, and the worse the stuff tastes the better they think it is for them. If we would just live simple lives, eat the foods just as the good Lord made them for us, in so far as is practical, do plenty of work and keep happy while doing it, we could forget sickness. Wild animals are never sick, but when they are brought under the control of man and given man-prepared foods, they become weak and sickly in many cases.

Honey is one of our choicest foods. When the writers of old wished to speak of a land that was exceedingly rich, they spoke of it as flowing with milk and honey. We state emphatically without fear of successful contradiction that honey is by far the best concentrated sweet ever devised for human consumption. But some say that it contains no vitamin E, V, or X, Y, Z. Our reply is: "Then it is better without them." Another will say: "Hurray, we found two and one-half vitamines in a barrel of honey, hurray!" Our reply is: "Then it is better because it has the vitamins." But how do I reconcile these statements that honey is better if it contains no vitamins and yet it is better if it does? Simply this: I believe that when Our Creator made honey, he made it exactly right for that class of food; if there are vitamins in it, it is better for their being there, and if there are no vitamins in honey, it is better without them. It is stated on good authority that honey contains mineral salts that are needed in the formation of teeth and bones. Also that the lack of these minerals will cause poor teeth and rickets.

King Solomon was considered the wisest man of his time and he was sold on honey as a health food. He said: "It is health to the bones."

Honey has been considered so sweet and so precious that it has in the past and still is used as a term of endearment. Can you imagine a young man in love with a sweet girl addressing her thus: "Hello,

"Here comes the bride, get on to her stride."

corn sugar." Or, "How I love you! You are as sweet as glucose." If a fellow should ever address his beloved in such terms, there would be no honeymoon.

In olden times when the couple were married, the bride prepared the most delicious foods known to the culinary art. Honey was included and was considered the best of all. This feast of good things lasted for one month, or moon, and was known as the "honeymoon." But nowadays there are too many divorcees. That is because they do not have a real honeymoon but a corn-sugar moon.

When the young people get married they have enough to make the first payment on

(Continued on page 59.)

From the Field of Experience

LONG RECORD IN BEEKEEPING

An Extensive Honey Producer Who Has Handled Bees for 72 Years

The Salt River is underlaid with a lake of water from which we can pump for irrigation when there is a shortage in the river. We have seven pumps in our Buckeye Valley, one of which is now throwing nearly seven hundred inches of water. Therefore, we do not depend on the flow of the river.

Our honey flow from this valley was formerly from mesquite and alfalfa. By raising two crops of alfalfa seed and the balance of the season run for hay or pasture, the bees had a long honey flow; but the mesquite has been largely used for wood and posts and much of the alfalfa land is now being used for melons and lettuce.

Many of our largest beekeepers move their bees to river or mountain ranges for the spring honey flow, then returning them to the valley for alfalfa. Last year and this year the mesquite flow was short, with low price and but little foreign demand for honey. I am informed that a number of our largest beekeepers are not moving their bees back and forth as usual. Some are offering to sell the bees for less than the hives cost.

My honey crop with conditions favorable runs about a thousand cases of extracted honey. I have been handling bees for seventy-two years and am handling them on a larger scale than ever. I have passed through several depressions before. Last year and this year I have had to feed heavily.—B. A. Hadsell, Buckeye, Arizona.

COMPARISON OF DIFFERENT RACES

Some of the Advantages of Caucasians and Carniolans Over Italians

If you can produce larger crops of honey with better bees and with the same investment in labor and supplies, you are surely cutting the cost of production. As this is very necessary with the present low price of honey, I suggest that you try keeping better bees.

I have at the present time three races of bees, viz: Italians, Carniolans and Caucasians. You are familiar with the habits or traits of the Italian bees, so I will mention them only as a comparison.

The Carniolan bees are very prolific, good honey gatherers, winter well and are far more gentle than Italians. However, they have one bad trait—that of swarming. They seem to build up large colonies with the fore thought of swarming, and, after swarming once, the parent colony sometimes builds up and swarms again later on in the season. If they can be held intact they are very satisfactory bees.

A cross between Italians and Carniolans produces bees that do not swarm excessively, are very gentle, little inclined to rob, build beautiful combs and are very industrious, working earlier in the morning and later in the evening. They produce more honey, and do not bend all their efforts toward raising more bees as do the pure Carniolans. This mixture as a rule is far superior to pure stock.

The Caucasian bees are superior to the Carniolans; they swarm very little if given plenty of room. However, this is an important point. They must have plenty of room next to the brood chamber. Otherwise they will fill everything with honey. Give them more room than you would Italians. They need it.

The Caucasians are even more prolific than the Carniolans, better honey gatherers, and they rarely ever sting. In fact, it is hard to make them sting. They are the gentlest bees known. This trait is readily appreciated by those who have ceased to be proud of their swollen eyes and wrists.

Caucasian bees are accused of using considerable propolis, but when you keep them in good hives that are not full of cracks they will use only a little around the entrance where it is easily removed. Any strain of bees will use lots of propolis when you give them poor equipment. Whenever I place a colony of Caucasians of a strain which is up to the average, in a yard of Italian bees, they always produce more honey than any of the Italians, and the poorer the honey flow, the more apparent this becomes.

They work earlier in the morning and later in the evening, and seem to find nectar when the Italians are starving. In

fact, they are storing considerable honey when Italians have only a little honey above the brood. I have never seen a colony of Caucasians during the late spring and early summer without some honey above the brood, while I have had Italians living from hand to mouth. One strain of Italians which I have, invariably has to be fed during June every year.

The Caucasians winter well. In fact, coming from a mountainous country, they are extremely hardy. The queens are very prolific, and build up the colonies very fast. They also maintain larger numbers of bees during the honey flow. They have a longer proboscis than other bees. This, no doubt, aids them in gathering more nectar.

A cross between the Caucasians and Italians make a very fine strain of bees. In fact, I believe they are even superior to the pure Caucasian. And contrary to the general rule regarding hybrids, they are not cross, so do not be afraid of their mixing. They will improve your Italians. In fact, a few Carniolan or Caucasian colonies in a yard will soon improve the whole apiary.

A very favorable trait of the Caucasians is the fact that they crowd their queen in the fall, and very often enter the winter with almost solid combs of honey in the brood chamber. This saves considerable work in the fall, winter and spring. This fact alone should make them very popular. Also they save money in the spring because they do not raise as many cycles of brood previous to the honey flow. They are broodless longer in the spring, but they build up much faster and to more populous colonies when they start than do the Italians. The fact that they build up fast just previous to the honey flow puts them in excellent condition to gather a crop. The bees are younger, not worn out, and a larger number of very young bees are ready to back up the field force.

The morale of a colony just reaching its peak as the honey flow comes on is much better than a colony that has built up previous to the honey flow and begun to loaf. The queens are in better condition to maintain the brood nest, not having raised as many cycles of brood.

The Italian bees are claimed to be more industrious because they are more inclined to rob. This inclination to rob is a distinct disadvantage because it spreads American foul brood to a very large extent. The Caucasian and Carniolan bees are less susceptible to foul brood from this source. Of course, no race of bees is not resistant to the manipulations of the beekeeper. He can cause foul brood to increase among any strain of bees by careless manipulation of combs,, supers, honey, or brood.

The Caucasian and Carniolan bees, being less inclined to rob, are much easier to handle, that is, they can be handled during dearths in the honey flow, and particularly in the fall after the honey flow stops. This often saves the beekeeper costly return trips when he is forced to stop work on account of robbing.

It is now possible to raise or buy queens at a very low cost in the late summer, and requeen a whole yard in a single day. It is far better to raise your own queens, however, if at all possible, as queens from a colony of any race whose bees respond better to your particular manipulations and locality are the ones that you should multiply.—B. W. Ritter, Denver, Colorado.

APICULTURAL MEETING IN PARIS

Elaborate Plans Being Made for a Wonderful Series of Events

Announcement has been made of the early plans for the combined meetings of the International Congress of Apiculture, the Apis Club and the Apiculture Section of the International Congress of Entomology, to be held in Paris, July 19-24, 1932. Immediately following the meeting of the International Congress of Entomology at Ithaca in 1928, plans were formulated for a combination of these three international organizations, for a great gathering of those interested in apiculture in 1932, and the plans now announced carry out the proposals then made. It is obviously desirable that there be unity in the efforts to bring about international co-operation in our work, and the forthcoming gathering in Paris promises to be a wonderful series of events.

The summer of 1932 may not be the most favorable time for an international meeting, because of the economic depression throughout the world. This was not anticipated when the original plans were formulated. But on the other hand, 1932 will be a favorable time for European travel for Americans, because of lower prices. It is not anticipated that any

great number of Americans interested in beekeeping will make the trip to Paris, but any who are going are invited to communicate with the undersigned, so that those who go will have an opportunity to take advantage of everything which will be done for our pleasure and comfort. The papers will be read in any one of three languages, but an inability to speak French or German is no reason for refraining from attendance, for one can get along nicely with one language.

Detailed plans for the beekeeping meetings are in the hands of Dr. George F. Jaubert of the French Société centrale d'Apiculture and of Professor Th. Mamelle, secretary of the apicultural meetings, and these two men are the most capable who could be selected for these posts. Our French co-workers will make certain a wonderful series of meetings.—E. F. Phillips, Ithaca, N. Y.

SPINSTER JANE SAYS—

Another New Year has been ushered in with a clash and clang of bells, and our recording angel sits waiting, pen poised, ready to record on each of the three hundred and sixty-six white pages our deeds, good or evil. How many pages last year were in letters of gold? How many blotted and stained with her tears?

At once we resolve this shall be a better year. How natural! Yet better to resolve and fail, rather than not resolve at all.

Solomon said, "Go to the ant, thou sluggard. Consider her ways and be wise." We wonder why he did not say, "Go to the honeybee," and then we feel sure he wanted to point out something very insignificant, to humble that sluggard. Perhaps, too, he remembered the stings.

Let us, this year, when making our New Year resolutions, say, "Go to the honeybee."

If we follow the example set by these little females, what a wonderful year 1932 will be.

1. We will be content under all circumstances.

2. We will keep our homes sanitary, and immaculate.

3. We will be industrious—indefatigable workers.

4. We will persevere and never get discouraged in our work.

5. We will trust in the Divine Being to supply our needs.

6. We will see only the good in everything, overlooking the bad. The hardest resolve of all to keep.

7. We will fight anything that threatens the peace or sanctity of our home. If we cannot win single-handed, like the bees, we will call upon our fellows for aid. Only thus can intemperance, immorality, and such evils be put down.

8. We will love and help the children, train them to be able to one day take our responsibilities.

9. When the time comes for us to leave the home colony, to a younger generation, and flit to the Great Beyond, may we find the Mansion already prepared for us, by the Great Scout who led the way.

Ho, hum! I've been almost sermonizing.

1932—and Leap Year once again! And now our flappers must flap to faster music, and secure a man!

But men—desirable ones, at least—are not to be caught napping. Most will put up the new dress required rather than accept Leap Year proposals. As a rule, they are getting more selfish, more self-centered, every year. Marriage, a wife, and home, bring cares and responsibilities from which they shrink.

If our girls would only follow the example of the little bees, and say, "I will shun the whole male outfit"—it would be interesting to watch developments.

How times have changed! Now-a-days our girls are go-getters, and man, poor creature, is the timid, squealing, porcine creature they pursue. Nearly always, too, they "bring home the bacon."

Girls, girls! Learn the way of the honeybee with drones, and be wise.

Now, Happy New Year to all—even to the men folk, a necessary evil, after all.

—Spinster Jane.

CHOICE MORSEL FROM THE HIVE

Charlie, the Chinese Cook, Makes an Interesting and Important Discovery

This is not "Told by the Jay," it is told by a truthful beekeeper.

Away back in the year 1876 I was taking care of about 100 colonies of bees in box hives for my uncle, Jerry Miller at Oso Flaceo (lean bear). This name is applied to the extreme northwest corner of Santa Maria valley.

My uncle, having several hired men to board, had a Chinese cook called Charlie. One day while I had the side off a hive cutting out honey, Charlie came out to have a "looksee" at the "Melican boy ketche plenty honey."

It so happened in cutting out the honey that I came to a new white comb partly filled with unsealed drone brood which I threw out on the grass near by. On looking around a moment later, I discovered to my surprise and consternation that Charlie had picked up the piece of drone brood and was eating it. I tried to explain to him that it was no good and offered him a piece of honey instead, but he only laughed at me and kept on eating with the white juice running out of the corners of his mouth.

I thought at the time that he didn't know what he was eating. Perhaps he thought that all that came from the hive was honey; but now after the lapse of many years and having learned a little more of the ways of Orientals, I feel quite certain that Charlie knew exactly what he was eating and liked it. It must be remembered that he came from a country where they discard scarcely anything that will sustain life.

Perhaps young drone brood is good eating. Who, of us, has tried it?—Milton G. Miller, Artesia, California.

SWEET CLOVER IMPROVES SOIL

Worn-out Land Made to Produce Large Crops of Corn

The value of farm land in northeast Kansas in the last ten or fifteen years has declined one-half to two-thirds. While there is considerable offered for sale now, most agents state that it is impossible to tell what the value is, due to the very few sales being made. This large decline in land values is no doubt due to the low grain and live stock market and also to the fact that the land is gradually losing its fertility.

There are many and varied methods advocated for restoring the fertility of the soil, none of which are so far universally adopted by the farmers. The writer, a farmer and side-line beekeeper, is a strong advocate of sweet clover for soil improvement.

An objection to sweet clover advanced by other farmers is the difficulty of getting a crop. Many seedings show no results. The very best seed obtainable fails to grow. On worn-out land it is especially hard to get a good stand. Another objection is that it is not as valuable for hay as alfalfa or other clovers. In fact, in this vicinity there is practically no sweet-clover hay harvested.

So far I have had fair to excellent success with sweet clover. It can be sown in the fall but if it starts to grow too early, late frosts are liable to destroy the young plants. Spring sowing is safer in that respect.

If the soil is run down in fertility but little if any crop result can be obtained the first year. My fields usually look like something that had been abandoned to the weeds. The second year this all changes; the sweet clover makes an early and vigorous start and grows rapidly, smothering out weeds and producing a dense tall growth.

Few farmers here have any bees, so they advocate plowing under while green. I allow my sweet clover to ripen and produce seed, then plow it under in the fall. This puts a very heavy seeding in the ground, and will usually make a dense crop the following year which is valuable for pasture.

However, after allowing a field to remain in sweet clover two years I have an excellent corn prospect on land that would not grow corn before cropped to sweet clover.

Many farms here consist of 40, 80, or 100 acres and the farmers claim they can not stand to lose two years of use while the soil is being rebuilt by sweet clover, but for the farmer-beekeeper the crop of honey one year would make the loss of the use of his ground only one year.—W. H. Eastman, Whiting, Kansas.

ADVANTAGES OF ORGANIZATION

Important Work Being Done by the American Honey Producers' League

The writer is of the opinion that our industry needs a national organization such as or similar to the American Honey Producers' League, but has found in recent months that comparatively few individuals lend their support. Some object to the League because of its name, some because of legislation and certain standards or laws passed by particular states over

which the League has no control, and some object to certain policies, yet they stay on the outside and criticize. They should get into the organization, help iron out and adjust the differences if any and build the organization into a stronger one.

Only as the individual units of a complicated industry such as producing and marketing of honey are able to prosper, so will the entire industry thrive. It may be impossible to suit the whims and fancies of every individual, but more often the combined opinions of a group of representatives from the various fields can steer a course midway in the stream which will benefit the various individuals to the greatest extent. Such in part is the purpose of the League and for this reason it should be maintained and supported.

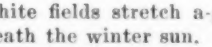
There may be those who argue that the American Honey Institute is doing more than the League and hence the League is no longer necessary. It is true that the Institute is accomplishing in a noble way one of the purposes for which the League was organized and stands. The Institute under its present name and method of procedure is accomplishing great results in its particular field of activity, to which the beekeepers of America should lend their active moral and material support, but in turn they should support the League which assists the Institute as much as possible in addition to its other purposes.

The official publication of the League is the American Honey Producer which is sent free to members. For various reasons, chiefly lack of finances and advertising, it has not been possible in recent years to put out all issues of the Producer. However, in 1931, a 16-page issue was forthcoming each month from April to October inclusive. These contain the majority of the papers presented at the Toronto convention as well as other items of interest.

In 1924, through the efforts of Colin P. Campbell, Vice President of the League and a prominent attorney of Grand Rapids, Michigan, all the laws relating to the honeybee were brought together and published by the League in a book entitled "The Law of the Honey Bee," which can still be obtained at a price of $1.00 from the bee journals or from the Secretary of the League. This is a valuable book and should be in every beekeeper's library.

If you believe in your industry and its future, then as a beekeeper you should believe in and support your local, state and national organizations. If the present policies can be improved upon, then get into the organization, present your ideas, discuss them with the members; if practical they will receive due consideration and perhaps adoption for the betterment of the organization and the industry of which you are a part.

Again we urge that if possible you attend the annual meeting of the League and the American Honey Institute at Columbus on January 25-28. If you can not be there, let the League officials and those of the Institute know that you are for them, morally and financially, by sending your dues for 1932, and your Institute contributions to the proper officials that they may know how to plan for 1932.—V. G. Milum, Secretary-Treasurer, American Honey Producers' League, Champaign, Illinois.



A WINTER WISH

The white fields stretch a-gleam
  Beneath the winter sun.
All round, in black and white,
  The hills their curved lengths run.
The pine boughs droop beneath
  Their load of flaky white,
While I their beauty see,
  Yet thrill not at the sight.

Night comes; stars twinkle forth;
  The silvery moon shines down,
Crowning the sombre pines
  With gleaming, gem-starred, crown.
On window-panes appear,
  Ferns, lacy boughs, a tree—
Yet I look on unmoved,
  With eyes that do not see.

I dream of rushing streams,
  Green fields, all starred with gold
Of dandelions, where humming bees
  All day, a concert hold;
Humming a chant so low,
  No lullaby more sweet.
That thrills me through and through,
  And lulls my cares to sleep.

Oh busy humming bees,
  Sweet, sweet your low-voiced hum,
As in and out, now here, now there,
  You nectar-seekers come.
Would I such life might live,
  As busy, care-free, glad,
Working and singing all the day,
  With no time to be sad.

—Agnes Ferguson Hunt, Webbwood, Ont.

From North, East, West and South

SOUTHERN CALIFORNIA.—Snow and rain fell again today (November 27) for the second time this month, bringing the season's total toward twice what it was at this time last season. From one-half to one and one-half inches fell over most of southern California, while a coating of snow from six inches to two feet deep covered the surrounding mountains. No artist can paint a picture that will do justice to the beautiful view that unfolds when the sun comes up and its light glistens on the snow-capped mountains gradually fading downward to the green of the orange groves laden with their golden fruit. This was the second heaviest rain of the month and the ground is getting a good soaking in many places. It has been many years since the vegetation on the so-called bee ranges, that is, the sages and wild buckwheat, has had a good wetting before the holiday season.

The Beekeeper, Like the One-man Farmer, Can Go on Forever But What About the Honey Producer?

Watch for signs of swarming, put on supers and extract the honey, is still the text of too many of our beekeepers. Our research departments and experiment stations are asking more and more, "what can we do for the honey producers?" Formerly it was, "What can we do for the beekeepers?" In my opinion, the honey producer will have to get a better break in the future than he has the past few years if he is to continue in the business in a large way, while the beekeeper, like the one-man farmer, can go on forever. In any of the lines of husbandry, carrying the labor and expenses on within the family is the age-old way of survival and will continue to be. Beekeeping is in that class, but when we try to turn beekeeping into honey production, as some of us have attempted to do—well, we must have a turn in our favor either by a better price for our crops, a larger yield of honey per colony, or a lowering of the expenses of production.

From time to time I have mentioned Dr. Maines and his efforts in perfecting honey marshmallows, honey chocolate and other delicacies made from pure honey. We are happy to report that a company has been formed to manufacture and place on the market these products. The California Honey Commodities Company is the name of the organization with headquarters at Uplands. Machinery is being installed and arrangements are being carried on to manufacture and place on the market the various honey products. All success to you, boys. The more outlets we have for honey the better.

Riverside County beekeepers met at the home of Mr. G. Lohrli in Riverside, December 4. Reports from the delegates to the state meeting were given, and all were much gratified to learn that the state meeting is to be held in Riverside next year.

Honey prices remain about the same as at last report. Beeswax ditto. Sales are slow and buyers are inclined to buy only when they have an order.—L. L. Andrews, Corona, California.

NORTHERN CALIFORNIA.—I am wondering if there is anything that can be done in times like these better than to build up your association. It is not a producing season and very little can be done in the way of inspection. The late crop of honey is well out of the hands of producers. Many of our producers have become distributors. They have sold out their crop and are now buying to supply their customers. They will continue as salesmen, some going so far as to sell their bees, claiming they can buy honey cheaper than they can produce. There are cases where this is true, but it is no argument against production.

Our office has never had so many inquiries for bees, and a good thing about it is the most of the inquiries come from young men looking for a future business. They have heard that low prices for honey have discouraged some of the beekeepers and that is enough to make the new prospect think there may be a chance for a future business.

Beekeeping as an Industry is Holding Its Own in Spite of Industrial Depression.

With all the discouraging talk we have had since the depression commenced, I doubt if we could find on careful investi-

gation that three per cent of the beekeepers have gone out of business. My guess is that three per cent will come back. Can this be said of any other business? In our cities we have rows of empty business places and the owners of office buildings are going into bankruptcy. These conditions have existed before, so there is hope that we may all come back.

There will be little inspection done in December and the first two weeks of January, but from the middle of January on, inspection will go on in earnest. Beekeepers over this entire state are determined to get rid of their worst enemy and thus help make their business a financial success.

Prices for honey have changed but little. Some larger sales have been made during the past month, but there is a tendency on the part of the bottlers to buy in small lots and buy oftener. The result of so many new distributors is that honey is on sale in many places for the first time.

Another pleasing sign is the improvement in store displays. The result of the greater effort on local sales is a more general clean-up of the 1931 crop. There will be less than usual in the hands of producers at the end of the year.

R. W. Boyden, for several years manager of the A. L. Boyden Co. Bee Supplies in San Francisco, passed away at his home in Berkeley, November 27. He leaves a widow, two sons and one daughter, as well as many friends, to mourn his passing.—Cary W. Hartman, Oakland, California.

ARIZONA.—Practically the entire month of November has been stormy, with rains in the valleys and snows in the mountains. About ten days ago we had one of the heaviest snow storms we have had in several years. Limbs on the oak, mesquite, and catsclaw were broken down by the thousands by the heavy weight of the snow. This is rather unusual for Arizona. In the eleven years I have been here, it is the first time limbs have been broken down in this way. We have also had more cold east winds than usual for this time of year.

By reading the reports from other states I find that weather conditions here in Arizona are just opposite from conditions reported in other states. During the past two years when many states were suffering from drouth, we had plenty of rain here. I believe our rainfall has been a little above normal for the past two years. We have had either rain or snow every few days since November 11 with plenty of cold wind thrown in. When the North, East and South report heavy rains we have very little rain here. I have noticed during the past several years that when the East has lots of rain, we can look for a dry year here.

Bees have been flying very little here, due to the stormy weather and cold winds. In the valleys they can fly most any time except in stormy weather. General reports are that the colonies went into winter strong in bees and heavy in stores. Very little feeding should be necessary next spring. Alfilerilla is already making its appearance, though it is impossible for it to come out at this time of year and do any good. It will be frozen. Should weather conditions be favorable more will come out later.

More beekeepers are holding their beeswax than ever before. They do not care to accept the low prices offered for it at present. Many will have it made into foundation and returned. A large per cent of the past year's honey is already sold.—Leslie Wedgworth, Oracle, Arizona.

TEXAS.—The weather during November was not cold but of a nature which kept bees within doors most of the time. For many days the temperature stood at an average of 59° for the 24 hours and seldom below 55°. This peculiar weather has almost done away with brood-rearing. The small amount of nectar coming in from broomweed and yellowtop has been sufficient to overcome the loss of honey in brood-rearing.

Dry Weather During the Fall Has Greatly Decreased the Number of Honey Plants For Next Season's Honey Crop.

The long dry fall has been such that no winter annuals have been able to come up. Sweet clover on ground that was cultivated in the middle of the summer has made a poor growth. There is no horsemint as yet above the ground. If heavy rains occur in December and January, these two plants may yet make sufficient growth to give a honey flow, but if these months are dry there will be no horsemint nor sweet clover in Texas in 1932. On the other hand huajilla, catsclaw, guaiacum, and mesquite are in good shape, and

with the present weather conditions will give a honey flow in their season. With the rapidly diminishing population of the native honey plants, it becomes more apparent that in the future horsemint, sweet clover, and cotton will become the main sources of honey.

Throughout east and central Texas, a plant known as *Helenium tenuifolium* and commonly called bitterweed is a source of grief to beekeepers and of pollen and winter stores to the honeybees. Everything that comes from this plant is extremely bitter, and it spreads to everything it touches. This plant grows in waste lands where the top soil has been worn away, or in overstocked pastures. In Texas west of San Antonio, another plant called bitterweed and going by the name of *Actinea odorata* has lately come into prominence as poisonous to cattle. The two plants very much resemble each other and the confusion of the names is very obvious. It has been proposed by botanists that the western plant be called bitter rubber weed.

At the meeting of the Texas Academy of Science held in San Antonio November 27-28, one of the most outstanding papers was by Miss Kathora Remy of San Antonio on "The Mineral Content of Honey." Miss Remy did her master's work in the University of Wisconsin on this subject, and is now at work on her doctor's thesis along the same line. Her findings are extremely interesting in that they confirm many of the commonly accepted ideas that the darker colored honeys are high in food value, where the lighter colored honeys are not. Just at present she is collecting samples of honey with the idea of showing that the color is not in any way related to the mineral content.—H. B. Parks, San Antonio, Texas.

OREGON.—Another annual meeting of the Oregon State Beekeepers has passed into history. On November 20 and 21 we met in Portland at the Multnomah Hotel with an attendance well up to standard, but not, of course, what we would like.

Two Important Projects Are Now Under Way at the Pacific Coast Bee Culture Field Station.

The Pacific Coast Bee Culture Field Station was represented by Mr. E. L. Sechrist in charge and Mr. Frank Todd. From the discussions presented by these visitors we were able to get some idea of the work which is being undertaken by the new Apicultural Experiment Station with headquarters at Davis, California. We were glad to know that Oregon is going to get its share of attention in this connection, and we are looking forward with anticipation to the work which is to be undertaken.

One of the subjects which will receive special attention in the near future is a survey of the cost of production of honey in Oregon and the factors which enter into this cost. In other words, a basic survey to determine what the real needs of the beekeeping industry are in the state. The outcome of this survey will determine largely the nature of future projects to be undertaken.

The second project being pursued by the Experiment Station is the relationship of bees to pollination on the Pacific Coast. We have long felt that bees are of more financial value to the horticultural industry in Oregon than they are for the honey produced. We feel that a careful study of this phase of beekeeping is well warranted.

Several other items of interest came up during the convention. It was suggested that our department of marketing make a study of the present freight rates in cooperation with other associations working along this same line. A motion was made and carried that the association go on record as favoring the use of U. S. standard grades on labels for honey. Resolutions were also passed supporting an effort to secure a tariff on beeswax, and in commendation of Mr. Hambleton for his recommendation for burning diseased colonies, when replying to beekeepers who have sent in samples of disease for examination.

During the closing hours of the convention, Mr. Lee S. Turner of the Eugene Fruit Growers' Association gave us an interesting talk on the relation between bees and the pollination of fruit. Mr. Turner has been associated with the Eugene Fruit Growers' Association for a number of years where he went primarily to develop the care of bees as used by the fruit men of that district in their orchards. Mr. Turner is not only well versed in beekeeping, but is much interested in the horticultural end also. He has done much to assist the orchard men of that district with their problems along both lines.—H. A. Scullen, Corvallis, Oregon.

IOWA.—Bees for cellar wintering were placed in their cellars at about the normal time, just before or just after Thanksgiving. Fall conditions were quite favorable for cellar wintered bees and the temperatures were not extremely low at any time. Therefore, there was not as much loss in weight as is often experienced between the time the bees can be packed out of doors and the time bees can be taken into the cellar.

The matter of cellar wintering is receiving more attention as it is recognized that something is wrong with the present system of maintaining cellars. The bees seem to remain quiet enough until January when they become unduly restless and in some instances have to be taken out of the cellar. In other instances it is possible by special manipulation to quiet them. A series of observations are under way now in an effort to clear up some of the questionable points about cellar maintenance. The co-operators in this work are offering every possible assistance and it is hoped that their generosity will enable those in charge of the work to get some information which will be of immense value to producers who make a custom of wintering bees in cellars.

The Moisture in the Soil is Finally Back to Normal, Thus Greatly Enhancing Prospects for Next Season.

The mild weather of the fall has continued into the early winter. The interesting factor is the increase in the amount of moisture delivered in November, so that all moisture deficiency has been wiped out. So abundant was the rain during the latter part of November, before the ground was soaked, that many of the streams of the state were out of their banks flooding the low lands. Everyone is happy because this is more moisture than has occurred in this state for two years. There is every reason to believe that the soil is thoroughly saturated to all depths with moisture. This normal moisture condition makes the future look much brighter for honey plants for 1932.

The movement of honey locally is very satisfactory. Part of this condition can be checked up to the reaction of the public to the united effort which was put out during National Honey Week; the public has heard more about honey than they have in a long time past. The talks on honey over the local station WOI resulted in a large number of requests from people in this state for recipes in which honey is used. These recipes have been put out by the Home Economics Department of Iowa State College. The public is in a receptive mind now and there should be no great effort necessary to move honey in almost any locality.—F. B. Paddock, Ames, Iowa.

KANSAS—The 1931 honey crop in Kansas was much below normal. Along with this has been a decided decrease in the price of honey, so that, at the present time, beekeepers are feeling rather poor. High temperatures and drouth conditions during the spring and through the summer were the direct causes of a short crop of honey. Many colonies during the latter part of the spring brood-rearing season starved or nearly starved to death. Following this came unseasonable, hot, dry weather which cut the crop in half in many instances, and in some cases to less than half. Very little comb honey was produced this year, due to these unfavorable conditions.

Because of the low price for farm products, such as wheat and corn, as also the price of crude oil, the buying power of the public has been limited. There has been a sympathetic trend in price of honey along with these other products. Kansas people have been using the price of wheat as an indicator of their buying ability. It would require four bushels of wheat at 25 cents per bushel to buy a 5-pound pail of honey at $1.00, which was altogether too much; therefore, five-pound pails of honey have been selling at from 60 cents to 70 cents each.

Liberal Fall Rains Greatly Improved the Condition of the Colonies and Also the Honey Plants for Next Season.

The fall honey flow conditions were fairly good in the eastern half of Kansas, due to timely rains which occurred during August and September. This moisture kept nectar-producing plants in bloom and secreting nectar so that the colonies could maintain themselves and build up to good strength for the winter. Colonies that are well taken care of and given sufficient protection should come through the winter and produce good colonies next spring. With the open fall, colonies which have not been amply provided have used up

much of their stores so they will need feeding the latter part of next spring.

Soil moisture conditions were decidedly deficient for the past two years until the first of November. With heavy rains bringing moisture to the soil, prospects for 1932 are brighter. Clover plants have made a good growth and with the subsoil in good condition, there should be a better chance for maintaining plant growth during the late spring. Many beekeepers are somewhat downhearted, which is in sympathy with other agricultural phases at the present time. Prospects for better crops are in view, but prospects for better prices do not seem to be indicated. It is hoped that something may happen to improve business conditions between this time and the first of July, 1932.

There will be no beekeepers' program at the Kansas State College during Farm and Home Week in February, 1932, since many beekeepers do not think it wise to hold such a program this year. They think that the attendance would be small on account of business conditions.—R. L. Parker, Manhattan, Kansas.

WISCONSIN.—"What are the prospects for the next season?" was the main question in the minds of the beekeepers at the annual convention held in Milwaukee, December 3 and 4.

So far as the beekeepers are concerned 1931 is past and they are looking forward to 1932 with much anticipation because most of those who were present at the convention had not secured much of a crop this past season.

Inquiries as to the surplus secured in 1931 indicate that where clover only was available the crop did not exceed 25 pounds to the colony in most cases, and that some did not secure any surplus. One beekeeper reports taking 500 pounds of honey from the bees this fall then feeding 500 pounds of sugar, which, in his case, would indicate that his report of the surplus can not be taken into consideration. No doubt there are other similar cases which would tend to show a higher production than was the case. In the north central and northwestern part of the state quite a few secured a fair surplus from fireweed and basswood.

It is practically impossible to make any predictions for 1932. We had an abundance of fall rain and those from whom reports have been received state that the bees were well taken care of before going into winter quarters. However, a good part of the state has not yet had any snow, and today (December 7) the temperature is down to 10° above zero. The clover is in fair condition, and if protected by snow from intermittent periods of thawing and freezing, it should be in reasonably good condition next spring although the amount is not up to normal because of drouth conditions.

The attendance at the convention was not as good as usual and a number of beekeepers who have been in regular attendance were absent. But those who were present were very much interested in the meetings, although there was not as much debate as usual. The main event of the program was the presentation of the Bee Kingdom gold medal to Mr Maurice Dadant in behalf of his father. Jim Barr was the toastmaster, and as usual made it interesting with his Scotch wit and jokes.

The convention approved the work of the American Honey Institute and voted to continue its financial support. The association also voted to continue its support of the American Honey Producers' League.—H. F. Wilson, Madison, Wis.

LOUISIANA.—Weather continues fine over this part of the state. Today, December 5, finds us in almost summer weather. The entire fall, excluding three days about the first of November in which we had heavy frost in the northern part of the state, has been really an extenuation of summer. Many days the thermometer rose to 90°. The result has been where flowers were still blooming, that the bees continued to gather nectar and rear brood. In other sections where frost occurred, bees are flying as usual and consuming honey. We do not, however, expect to have many bees starve this winter because of the unusually large fall honey flow. Much of this has been left in the hives on account of the low prices now prevailing.

Bees are going into winter quarters this season in better condition than in the past several years. Many colonies are still rearing brood and in looking through hives several days ago, I found many of them with three and four solid frames of brood.

We had an excessive amount of dry weather in the fall, but during the past ten days we have had a great deal of rain,

which has helped the honey plants and placed them in excellent condition .

The low price offered for large lots of honey has been discouraging to many, and a few have sold their apiaries. But there were others who jumped at the opportunity to purchase them at a bargain price. No doubt the bees are now in better and more willing hands.

Two-Thirds of the Largest Crop of Honey Produced During the Past Eight Years is Being Sold Locally.

Louisiana as a whole produced more light colored honey of better quality with the delicious southern flavor, this past year than I have ever seen here before. I believe that two-thirds of it will be sold at home. The great drouth of 1930 killed almost everything in the fields for the farmers, but the honeybees found plenty to do in visiting the adjacent swamps or lowlands close by. They brought in the greatest crop of honey that has been gathered in the past eight years.

The owners of these bees had never tried to sell honey before; in fact, they gave their colonies but little attention. Being out of ready cash, they resorted to the sale of honey which they sold in the neighborhood. They now have more respect for the honeybee and have put them in shape to produce more honey and a greater income. Thus the drouth has helped the bee business and no doubt when better prices come back, many more bees will be kept in Louisiana.—E. C. Davis, Baton Rouge, La.

NORTHERN INDIANA.—The weather during the fall months has been exceptionally warm, with an abundance of rainfall. In fact, our first killing frost did not occur until about November 25, at which time dandelions, white clover, and other flowers appeared in sheltered places. The result has been that the bees consumed considerably more of their stores than in former years, and it was found necessary again to feed some of the lighter colonies by removing empty combs and inserting full ones. The weather conditions have been favorable for the growth of clover and, thus far, prospects are good for next year's crop.

Honey sales through the stores have been much slower than in former years, and, as tourist travel slackens, roadside sales are falling off. Most of the movement in honey in this locality at the present time is through house-to-house canvassers. Owing to the lower price, most of them buy the darker grades of extracted honey.

Comb honey will all be disposed of within a few weeks. In fact, I do not know of any locally-produced clover comb honey remaining in the hands of the beekeepers. There is still on hand a small quantity of amber comb honey as well as some white that is being brought in by chain stores and others and which is being sold at unreasonably low prices.

During the past season and for many years previous, our state bee inspectors have been doing all that was possible in the endeavor to clean up foul brood, but the work has been handicapped by lack of funds with which to employ a sufficient number of men to thoroughly carry on the work. In my opinion, American foul brood can not be eradicated by an annual partial clean-up. Again, too much time should not intervene between the first inspection and the final round to see that the work is completed. Furthermore, inexperienced beekeepers should not be encouraged to try to save diseased colonies. In most cases they make a mess of it and succeed only in spreading the disease, as is frequently demonstrated in this locality.—E. S. Miller, Valparaiso, Ind.

WESTERN NEW YORK.—The Empire State Honey Producers' Association will hold its regular annual winter convention in the city of Rochester at the Seneca Hotel, January 12-13, 1932. The annual meeting of the New York Horticultural Society will also be held at Rochester on January 13-15. Both societies will meet in joint session on January 13 and the program of this session will be devoted to subjects of mutual interest to both fruit growers and beekeepers.

This is the first time that a joint meeting of these two societies has been attempted. It is a result of the increased interest and understanding of insect pollination on the part of fruit men.

The New York Horticultural Society is one of the largest and most influential societies of its kind in the country with an active paid-up membership of something like 1500. Details of these meetings can be secured from the secretaries, Roy J.

McPhearson, LeRoy, N. Y., of the Horticultural Society, and E. T. Cary, Syracuse, N. Y., of the Honey Producers' Association.

Here is Good Evidence That Per Capita Consumption of Honey Is Now Increasing.

The retail demand for white honey is still pretty good locally. Retail sales are increasing each year. This surely indicates that the per capita consumption of honey is increasing.

The weather has been exceptionally fine and warm all fall, allowing bees to fly every few days right up to the present time, December 7. Colonies are well supplied with good natural stores and plenty of young bees and should survive the winter in fine shape.

At a directors' meeting of the Western New York Beekeepers' Association last Monday evening at Lockport, it was decided not to hold a winter meeting this year, but to ask the members to attend the state meeting at Rochester.—H. M. Myers, Ransomville, N. Y.

MICHIGAN.—The winter meeting is to be held in Lansing, January 13. This year it is to be a one-day meeting with a banquet in the evening, enabling all within a radius of 100 miles to return home the same day if they wish to save hotel expense.

In spite of a practical failure of the honey crop, if beekeepers will look into their neighbor's business problems they can find much to be thankful for. For instance, one friend has lost $1000 a month for 18 months on rentals, to say nothing of the taxes and upkeep. A farmer next door got a bumper crop of wheat, thought the price was too low, bought a herd of hogs, fed the wheat, and saw the market on pork drop out of sight. Another farmer, a fruit-grower, let a good share of his crop rot under the trees. Many more instances could be given. The thing to remember is that the fellow who stays with the ship and keeps his investment in the best possible condition is mostly likely to win when the tide turns.

The Beneficial Effects of National Honey Week Have Been Offset by Dumping Honey at Low Prices.

Beekeepers throughout Michigan worked hard to make National Honey Week a big success. And temporarily there seemed to be a reaction in the form of slightly higher retail prices in some cities. Since then, however, the market has dropped in at least two cities due to the dumping of large quantities of tin and glass packages at ridiculous prices.

In this locality the chains are getting better prices for both comb and extracted honey than the independent grocers. It is encouraging to find that the beekeepers in central Michigan who had a failure are buying from their more fortunate brothers in eastern Michigan to supply their trade.

In some localities, bees went into winter quarters fairly well supplied with fall honey. But the colonies that still have the honeydew they got last summer, will not be in any too good shape in spring. Bees have eaten much more than usual since October 1, due to unseasonable warm weather. It is likely that losses from starvation will be heavy unless extensive spring feeding is done.

Clover looks a little better after the fall rains, but we still have a deficiency of five inches of rainfall.—R. H. Kelty, East Lansing, Mich.

ONTARIO.—November weather was very fine for our latitude. All records were broken at the Toronto observatory as the average temperature for the month was higher than any ever recorded since records have been kept. On November 23, with a temperature of 66° at 3 p. m., I noticed a few colonies at one apiary carrying pollen quite freely.

On December 4, geraniums around our home were practically untouched with frost, but on the morning of December 5, a sudden drop to zero at last finished all tender vegetation for this season. These simple facts will not be news to people in our latitude, but perhaps they may be a bit surprising to folks away down South who often think that here in Canada our chief production is icebergs and snow banks.

As was to be expected, the attendance at the convention of the Ontario Beekeepers' Association was not as large as in late years. With prices of all products including honey, down to the lowest level that most of us have ever experienced, it goes without saying that people are, in many cases, cutting down expenses to the bone, and attending conventions is no doubt not

counted a "necessity" by many. In common with many luxuries, they deny themselves the pleasure of attending such meetings during times of depression. However, I noticed that the interest was well maintained during all the sessions, and the last session on the third day had more in attendance than the first session.

Low Cost Liability Insurance for Beekeepers Was Secured Through the Ontario Beekeepers' Association for Its Members.

Matters of general interest to the industry were well discussed. One item of business in particular impressed me very much. We hear now and then of damage being done to horses and other animals, and more rarely of people, being badly injured if not killed from the effect of being stung by bees. This past summer one of our well known beekeepers had the misfortune to have a team of horses owned by a neighbor stung to death by his bees. Whenever cases like this occur they receive wide publicity, and possibly we are led to believe that such happenings are quite frequent. That such is not the case appears certain, as a reliable insurance company came forward and offered to issue group insurance protecting every member of the Ontario Beekeepers' Association from all personal liability up to $10,000 for a single accident if I remember correctly.

This company is not making this offer for humanitarian or other unselfish reasons. No doubt they have fully investigated records and convinced themselves that losses from damage done to persons and animals are very low, else they could not offer such a very low rate as 50 cents per member.

I read that editorial on page 741 (December issue) relating to fermentation in honey with considerable surprise. With everything in their favor in the way of carrying out experiments as compared with the hit and miss results obtained by hit and miss methods, I am frank in admitting that the conclusions reached by Prof. Wilson and Mr. Marvin should be correct. However, I am still "from Missouri" on this matter as our experience has been so different.

For years we followed out the advice of keeping honey in a hot place. Our favorite method was to put honey reserved for our own use in the attic over our kitchen. In the summertime on hot days the heat up there would be almost unbearable, often going up to 100° or over. With no fire in the kitchen in the winter, zero temperatures would be registered so we had the extremes all right, and most of the time well away from the danger zone of 55° to 65°.

While we always kept the finest honey we could get for our own use, to our surprise we found that honey kept in that attic through the hot summer months (I refer to honey of the previous year's crop) would always deteriorate, no matter how well ripened the honey was. After this exposure to such extreme heat and rapid changes to cooler temperatures, we would find fermentation appearing on top of the pails of honey.

We then tried storing it in the basement of our home where I expect the temperature would be almost stationary around the danger zone of 55° to 65° as named in this editorial. It has always kept in perfect condition since then. At present there are two pails of clover honey in this basement from the 1929 crop and a few pails from the crop of 1930. They appear as they did when first placed there and I know what they would be like if they had been stored in the attic referred too.

Some years ago a friend of mine had a large crop of honey that he did not sell the year it was produced. It was all stored in a basement in sixty-pound tins during the winter. In the spring, fearing that it would not keep well in the basement, they carried a large part of the crop upstairs, and were bothered with it all that season as it took up room badly needed in the extracting room. In the fall when they sold this honey they got the surprise of their lives as the honey left in the basement was in perfect condition—every can in the lot. But that stored upstairs where it had been subjected to great changes of temperature told a different story. All cans exposed to rays of the sun were more or less fermented while cans in the center of the pile were damaged very little. If my friend sees this item, I feel sure he will substantiate all I have said.

I cannot explain why we should have had such different results, but if I want to keep real good honey for an indefinite period, I would prefer a basement or other place where the temperature is fairly uniform and not subjected to changes varying from 100 above, to below zero.—J. L. Byer, Markham, Ontario.

Heads of Grain from Different Fields

Simple Method of Rearing Queens

The shallow food-chambers have also proved very valuable in queen-raising. Having all pure Italian stock to begin with, I raise all my young queens. There was brood in every food-chamber when the honey flow began. I simply placed these over an excluder when supering and let queen cells develop. When nearly ready to emerge, I placed them in nuclei, and had nice young queens at very little expense. Score another point for the food-chamber.—C. M. Isaacson, Middle River, Minnesota.

Tunnel for Heavy Packing

To provide a tunnel for heavy packing I lengthened the bottom-board to a standard of 24 inches, and I have all my new boards made the same length so that they are all interchangeable. It will not be found very much work to add the piece to the bottom-board and make it any length that is desired. A standard piece of board 4 inches wide (if bottom-board is made 24 inches long) can then be laid across the front of any bottom-board, thus forming a safe tunnel that never gets out of alignment or fills up with packing.—C. F. Marsh, Clarksburg, Ontario.

Food-Chamber Above Inner Cover

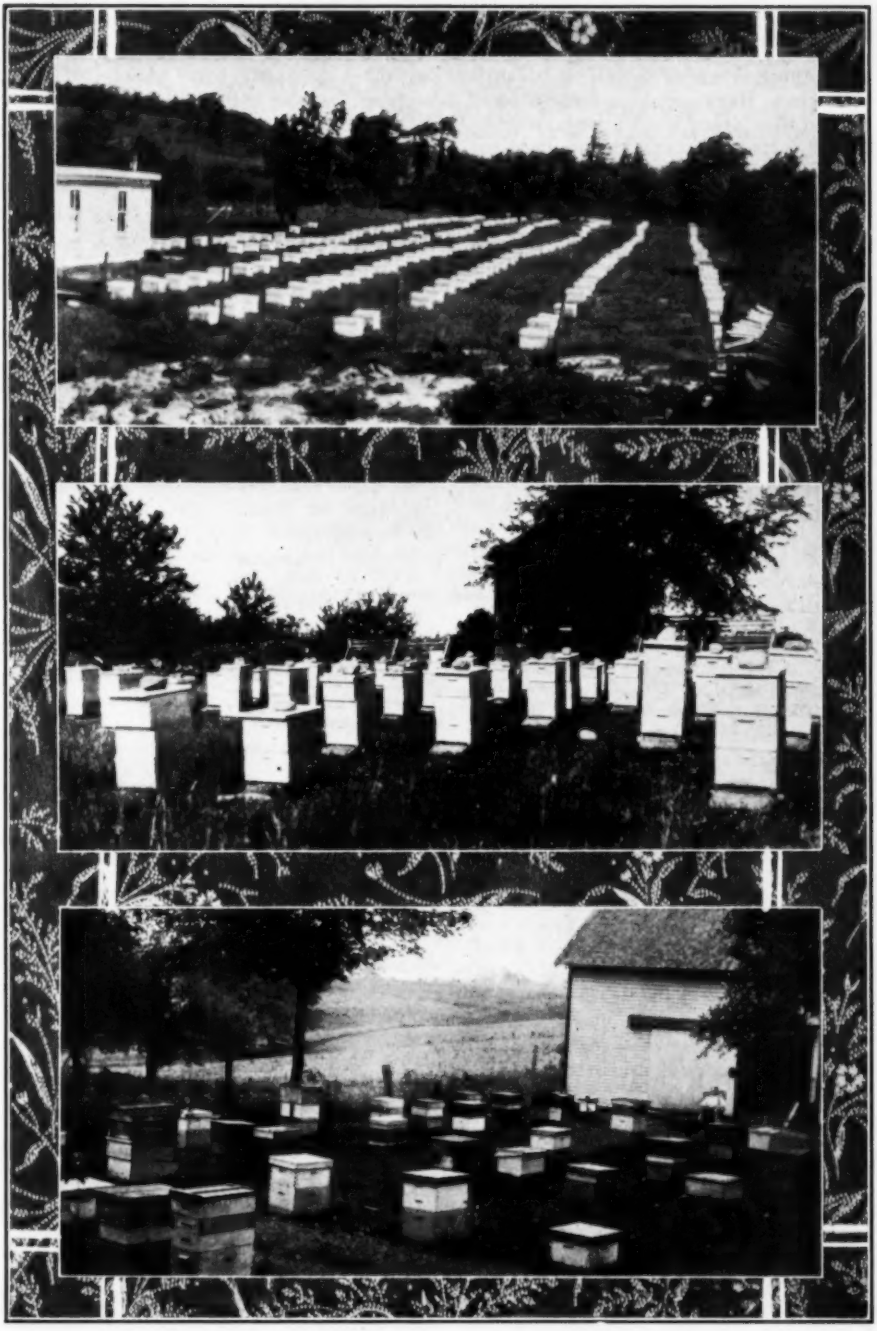
During the past several winters I have been quite successful in the use of the inner cover between the brood-chamber and the food-chamber, or upper story. I prepare these boards with about three ⅜-inch holes, through which the bees pass up or down. Thus far the clusters have staid below, while the bees carry all unsealed honey below promptly and then begin cutting caps and carry down the sealed honey. The small holes in this inner cover seem to let the vapors rise, so I have not discovered any trouble from frost. However, I would not use any excluder or other divider which would not permit the queen to go up with the bees, if they should be inclined to cluster above.—J. H. Sturtevant, St. Paul, Nebraska.

Best Region for Beekeeping

Don't get excited about some other state. I have now moved in a complete circle and have not found bee paradise yet. The states of the plains produce lots of honey if the conditions are right, but they are not always right. I find that where large honey crops are produced the price isn't so good and the chance for disease is greater. As a general thing people in the South eat more sweets than in the North. I believe the poorest state I was ever in was bragged about the most. I heard it all as I stayed twelve years, and I didn't stay because I wanted to either. That is a good place to winter bees, but the trouble is to get honey to winter them on. The best thing for us through these trying years is to sit tight, keep ourselves and bees in as good a shape as we can, then, when we get so old that the corporation will not have us, we can get a little honey; and we will be eating God's finest sweet.—Gene Rogers, Carthage, Missouri.

A Let-Alone System

A Maryland farmer was asked to tell all about how he managed his bees and produced his honey crop. After a long pause he replied: "Put on the boxes," then after a still longer period of thought he said: "Take off the boxes." That was all there was to it. That was very near my experience years ago after my swarm of black bees, presented to me by my grandfather, was well installed in my single-story Langstroth hive. This colony stood in our garden for many years and gave two full supers of 28 sections each every season. They received attention only three times a year. They were examined when the supers were put on in June, when the supers were removed in August or September and were given a super rim with a bag of chaff that filled it in the fall. They were never fed, always had all they needed below. They were acclimated to that region and continued to do what their ancestors had been doing in box hives for no one knows how many generations. They never swarmed to my knowledge as we were usually away in July. No bee disease was known in that territory then. The bees would get in such a panic when examined that one would perspire with nervous excitement as they rushed over the combs and from one part of the hive to the other.—S. Cushman, Chicago, Ill.



APIARIES HERE AND THERE

Upper—Apiary of Lyle and Eldridge, Sharon Springs, New York. Middle—Apiary of S. M. Shales, Devils Lake, Michigan. Lower—Apiary of H. M. Leach, Hiram, Ohio.

Talks to Beginners

Geo. S. Demuth

Beekeeping is one of the oldest pursuits of mankind. Honey and honeybees have attracted the attention of men, women, boys and girls down through the ages, not only because honey is a delightful food, but also largely because a study of the way the honeybees live and solve their many problems is one of the most fascinating in all nature. It was no doubt man's curiosity regarding the mysteries formerly hidden within the bee hive that caused him to discover the delightful food which we call honey. The oldest literature in which mention is made of the honeybee indicates clearly that those who pried into the wonderful things in the life of the honeybee in ancient times were filled with enthusiasm similar to that of the beginner today. Even in this day of commercialized honey production, the main incentive in beekeeping in the last analysis is, in most cases, largely a matter of intense enthusiasm arising from a study of the many interesting activities of the honeybee.

Some of the older masters in the art applied the term "bee fever" to the enthusiasm so characteristic of the beginner in beekeeping. It is this enthusiasm rather than financial consideration alone, which has built up during the past sixty years the great industry by which, according to best estimates, the United States alone produces annually something like 250,000,000 pounds of honey and nearly 10,000,000 pounds of beeswax. Thus, while beekeepers find that an intensive study of the bees and their habits is well worth while because of the pleasure derived from it, it is also quite profitable on the financial side. In most cases the financial gain is in almost direct proportion to the enthusiasm of the beekeeper.

Qualifications for Successful Beekeeping

Bees are being successfully kept by people in various walks of life. Many busy business men, doctors, lawyers, dentists, ministers, and others, find rest and recreation in caring for a few colonies of bees during their spare moments. Many boys and girls are paying their way through high school and college by keeping bees, and a surprisingly large number of people are making their living chiefly through honey production. Among the more important qualifications for successful beekeeping are the willingness to attend to details, doing the right thing at the right time, and sufficient interest and enthusiasm to tide over poor seasons or other adverse conditions.

While some locations are better than others for honey production, bees are being kept successfully in every state in the Union and in every province in Canada—in fact, wherever nectar-bearing flowers exist in sufficient numbers throughout the world. While most large apiaries are located in the country somewhat remote from buildings, roads and cultivated fields, thousands of colonies are also kept in villages, towns and cities. In some cases fair-sized apiaries are kept in the midst of some of our largest cities, the bees foraging on nectar-bearing plants in vacant lots and in the parks.

Literature for Beginners

Fortunately, there is a vast amount of dependable information available for beginners in modern beekeeping literature. Those who are interested only in learning how to take care of their colonies, will find in the bee journals and in books on beekeeping definite directions for the management of their colonies under various conditions. Those who are interested in bees chiefly because they are wonderful subjects of nature study, will find this phase of the subject discussed in the bee journals and books. Those who are interested chiefly in scientific phases of the subject will find much of interest in the anatomy and physiology of the honeybee, the behavior of the bees in response to their environment, the nectar-bearing plants of different localities and regions, nectar secretion, the chemistry of honey, value of honey in the diet, and almost innumerable other subjects which constitute the scientific basis of beekeeping.

The United States Department of Agriculture has published many bulletins on different phases of beekeeping, many of which can be had for the asking, while others no longer available for free distribution, can be purchased for five to ten cents each from the Division of Publications. Many of the agricultural colleges have published bulletins on beekeeping in which are described the best management

of bees for the particular region. Thus, by writing to the local agricultural college and to Jas. I. Hambleton, Bureau of Entomology, Washington, D. C., asking for these bulletins, beginners can build up a valuable beekeeping library. In addition to extensive reading during the winter, beginners will profit greatly by attending meetings of local beekeepers' societies and visiting neighboring beekeepers. Most beekeepers are quite willing to pass along information to inquisitive beginners.

Obtaining Start in Beekeeping

Many beginners are already in possession of one or more colonies of bees while many others will purchase them locally during the winter or early spring. Still others will start with package bees from the South, installing them in April or early May, according to locality, in time to build up the colonies to sufficient strength to obtain a crop of honey this season. Still others will wait until the bees begin to swarm, expecting to start by purchasing one or more swarms from a neighboring beekeeper. Others will obtain a start in beekeeping by cutting bee trees or catching run-away swarms. Of all these methods of starting, that of obtaining swarms is usually the least profitable since by that method the chances of obtaining surplus honey are postponed until the following year.

While there is plenty of time, especially in the North, to obtain the bees, beginners should make their plans in advance to obtain them early enough to secure a crop of honey this season instead of using the first season to get started and depending on producing a crop of honey the second season. This can be done by purchasing full colonies this month or next, in the South, and in the North as late as May or in some cases even in June.

Care of Colonies This Month

Bees need but little if any care during the winter provided they were in proper condition last fall. Beginners who already have their colonies should make sure that they have plenty of honey to last through the winter. While it is difficult to estimate the amount of honey in the hive at this time, it can be done with fair accuracy by weighing the hive as it stands, then weighing a similar empty hive containing empty combs. If the hive is without combs, allow one pound for each comb. Three or four pounds should then be deducted for the weight of the bees, and the difference should represent approximately the amount of honey. To be well supplied with honey, the colony should have at this time 25 or 30 pounds. If any are found having only a few pounds, thus facing sure starvation during the winter if not fed, they can be saved by feeding even during cold weather.

This can be done by carrying the hive into the cellar and feeding sugar syrup. The syrup can be made by dissolving two parts of sugar by measure in one part of boiling water. It can be fed by placing it in a friction-top pail having 25 or 30 small nail holes punched in the cover. The pail filled with warm syrup should be inverted directly on top of the frames in the hive in contact with the bees. To do this, it is necessary to remove the cover, then cover the hive with a piece of cloth, canvas, or building paper having a hole directly over the cluster over which the can of syrup is placed. If the weather is not too cold, colonies can be fed out of doors in this way even in mid-winter. However, beginners should not disturb their bees by feeding during the winter unless it is necessary to prevent starvation.

If the hives become covered with snow, it is not necessary to dig the snow away. Bees sometimes winter perfectly when the hives are completely buried under loose snow for several months. There is no danger of their smothering unless the entrance should become closed with ice. This will not occur if the hives are buried under the snow although it sometimes happens during a sleet storm. In such cases all that is necessary is to punch a small hole through the ice at the entrance so that the bees will not become restless because of their imprisonment. If many dead bees accumulate on the bottom-board they can be raked out with a bent wire and thus prevent the entrance from being closed with dead bees.

If the hives are located in an exposed place where cold winds sweep over them, it is well to put up some kind of windbreak, such as a slatted fence or corn fodder set against a fence or railing. The hives should be located where they will be in the sun most of the day. This helps greatly since the little additional warmth will enable the bees to shift their cluster to envelope more honey if necessary.

Food Department

Malitta D. Fischer

Don't Procrastinate

How's that for a resolution for beekeepers for 1932? Personally, I think it is a good one for all of us since the application of this principle is indeed great. It is so easy to say, "Well, I'll do this tomorrow or I'll do that next week or next month. It will still be cold and I can get that or this done."

The beekeeper has many things to do in winter and the sooner he does them, the better. Suppose you make your resolutions and then carry them out right at the time they should be carried out.

There's your bee supplies. What shape are they in? Have you checked them over so that you know just what has to be done and when it needs to be done so that everything will be in readiness in time for the beginning of the active work preparing for the gathering of the crop? Have you placed your order early enough with the bee supply companies so that you are sure to get those knock-down hives or other equipment in time so that you will have them all in shape in time for the proper use?

Then there's your equipment. Have you repaired it? Have you replaced or made arrangements to replace that which can not be repaired? What's the use of delaying important tasks like these—they have to be done some time and the sooner the better.

Are you delaying your membership dues to your county, state, and national associations? Secretaries of these groups will agree with me, I believe, that more beekeepers procrastinate in this one thing than any other. Time and time again, a beekeeper will say to himself, "Well, I'll join next year. I can get by this year. I did not have much of a crop and so I guess I won't join." Or, perhaps, he'll say, "I want to be a member of my county association, my state association and the national one, too, and next month I'll send in my dues for all three." Isn't it funny the way that next month covers twelve months and the poor secretaries of these various associations tear their hair and send out notices, worrying because they have to spend so much postage on renewal notices, and still the memberships do not come.

Beekeepers' organizations help who? The beekeeper! The association is simply a tool which is designed to help the beekeeper help himself. I know many of the associations exist in name sometimes and do not seem to function, but if they don't, beekeepers should see what the trouble is, eliminate that trouble, get the association to function, and then they will be helping themselves. It is possible to do collectively what it is impossible to do individually. That is the important reason why you should not procrastinate when it comes to paying your dues. That's just as much a part of your duty as a beekeeper as it is to properly requeen a colony.

I should like to tell you more about the functioning of some of the associations, particularly what some of the county and state associations did this fall and winter at their county fairs, state fairs and during National Honey Week. And there are many things you should know about American Honey Institute, the one educational association beekeepers have that devotes its entire program to developing a market for the honey beekeepers produce. But it would take too much space and if you are interested you can get the facts by contacting your local county secretary, your state secretary, or the officers of the Institute. Please do this. Won't you, today? Get the particulars of these organizations and then help yourselves to be better beekeepers by sending in your memberships at the right time—what would be a better time than the beginning of the New Year!

Contantly I am reminded that one of the greatest procrastinations beekeepers most frequently commit concerns their marketing program. And it's this phase of your 1932 program I wish to discuss.

So many times beekeepers will discuss with a homemaker in January what they should have discussed six months previous. Seasons and special days influence people's eating as much as they do any of their other activities. Whether it is Thanksgiving, Christmas, Easter, or the Fourth of July, the season suggests certain foods, and the beekeeper who makes displays, outlines his sales talks, and mer-

chandises his honey to appeal on these days, will increase sales.

January is a splendid time to plan your selling appeals during the year with this thought in mind. Outline your marketing program for the year and then follow that program. Do not put off what you planned to do for January until February or what you outlined for March until June. If you run out of honey, get the very best honey you can from some beekeeper who has more than he has been able to sell, and carry right on with your seasonal selling program. See that the recipes you give the homemaker for using your honey correspond to the season. Study your sales talks so that you know them so well that you will not constantly be saying over and over again to the housewife what an excellent cough syrup honey makes, but, instead, you will be suggesting to her how honey is particularly fine for her January menus since it is an energy producing food, and January is a month that she wants to give her family good energizing combinations.

In February there will be Valentine and Lincoln and George Washington parties and wouldn't it be interesting to suggest special combinations made with honey for these entertainments? March might call for a St. Patrick's food service that used honey or it might be some desirable honey suggestion for the Lenten season. April usually brings us Easter; and May, the delightful spring parties which demand the different types of food—an endless variety of dainty dessert services—a place where our golden honey can easily hold its own.

June is the month for brides and I wonder how many beekeepers have taken advantage of the historical reference to the origin of the word "honeymoon." Honey was smeared over the bricks of the door of the newly married couple and was said to last from one moon to another; this period of time supposedly represented the happiest period of the couple's life and thus the word "honeymoon" came into existence. Such references make the honey sales talk interesting and helps the salesman to get a good audience with his prospect, and that is the first requirement for making a sale.

July with its bang and noise and heat always means Fourth of July and here is an opportunity to introduce honey sundaes, honey ice cream, honey meringue, and honey dressed fruit salads at the big celebrations. Picnics must not be forgotten and honey plays a fitting part in the picnic menu.

August usually develops an interest in canning and preserving on the part of the housewife, and we must have our honey canning suggestions ready for this month as well as September. Then, many homemakers want to make entries in the culinary departments of the county and state fairs. Our best honey suggestions should be available to homemakers for their fair cookery.

September and October startles the mother a few days for she realizes that the lunch basket season is here again and the child's school lunch is one that often discourages the mother because she can not make it as interesting and satisfying as she wishes. Honey belongs in the school lunch not only as a spread but in the form of attractive cookies, sponge cakes, delightful fruit sauces, tempting dried fruit confections, the always popular honey krisp balls, and the nourishing milk and honey drinks.

November should be one of the easiest months to increase honey sales for everyone is fruit-cake and holiday-cookie conscious. There's Thanksgiving to start off the holiday season. How pleased the housewife will be to know that she can do her Thanksgiving and Christmas baking all at the same time if she does it the honey way. Then you must have just the type of honey recipes that will permit her to do that.

December is the climax to our seasonal suggestions—Christmas candies and cakes and cookies—honey belongs in the holiday baking. Study the foreign recipes and you will see that almost every popular honey cake calls for some honey.

How fast we have traveled in our honey sales! We have covered an entire year in less than an hour. And how many of the seasonal suggestions have we omitted, but in the beginning it is well not to include too many. Plan your seasonal sales program in January and then at the beginning of each month you will have time to add more details to that month's program.

To be a little more detailed about the January program, may I suggest that you concentrate on the first and most important meal of the day and how honey fits into that food service? Really, on the cold winter days in January is there anything

(Continued on page 59.)

Bees, Men and Things

(You may find it here)

"Bee Careful!
"You never hear the bee complain,
Nor hear it weep and wail,
But if it wish, it can unfold
A very painful tail."
—A. H. Bacon, Columbiana County, Ohio.

"I have had to purchase honey and have it shipped in to supply my customers this year."—W. L. Cox, Grays Harbor County, Washington.

"Our crop here was very short, and amber in color at that. Most of the honey sold here is white honey from the St. Louis Valley."—Otis E. Adcock, Otero County, Colo.

"A hot stove lid is often helpful in removing caps from cans and jars. Placing the hot lid directly on the cap will cause the metal to expand and the cap can be removed before the other parts are expanded by the heat."—J. H. Sturdevant, Howard County, Nebr.

"I use odd-sized sections, 4 x 5 x 1½. I wish that this size were regular for they are heavier when filled than the regular size. My home market is not exacting as to appearance, but my customers want sections that weigh 16 ounces net."—Newton Griswold, Delaware County, Illinois.

"We had a heavy crop of fine orange honey last spring which is pretty well cleaned up. Later yields from palmetto, mangrove, etc., were very light and of more or less mixed off grades. One of our experienced men says that the signs for another crop of orange honey are good."—C. F. Smith, Orange County, Fla.

"I believe I have a good subject for our friend Old Drone. It has to do with the recent discovery by C. L. Wright, of Erie, Pa., a new method of controlling swarming which he has recently discovered. His method is to fence in the bees with a large chicken screen, and then turn loose in the enclosure one skunk for each two colonies of bees. The skunk will eat off the old bees during the night and the bees suffering will make plans to swarm. It is also true that the bees which have been used for food by the animals can be sold as fur later."—E. J. Anderson, Centre County, Pa.

"I have been told that bees do not gather nectar from alfalfa in the eastern states. There is quite a bit of alfalfa around here and my bees worked on it steadily while it was in bloom. I could not find that they worked much on anything else last year. They made a good crop of fine flavored honey of very light color which has a different flavor than clover."—Irvin J. Worman, Essex County, N. Y.

"That was a fine article on Huber in the December issue of Gleanings in Bee Culture. I was also greatly pleased with the article by Jay Smith in the September issue describing his new winter case. It appears to me that this is a great scheme. I have been wondering why his bottom-entrance plan would not also work on the regular quadruple winter case."—Nathan Palmer, Huron County, Ohio.

"I am glad to report on our experiments with placing bees in the orchards. Although there was much unfavorable weather and cold winds after we moved the bees in, so there were really only a few hours when the bees could do their best, the results were quite satisfactory. The colonies were scattered over the orchard. I was concerned about the Stayman Winesap being properly pollinated, but I had a fairly good crop."—C. Weckesser, Wayne County, Ohio.

"Present-day formulas for feeding babies prescribed by leading child specialists and hospitals include syrup. Why use syrup when honey is the natural sweet? Milk modified by adding honey is more nutritious and the honey breaks the curd, thus aiding digestion. Honey is also excellent in cough and cold remedies. The key to the problem of marketing honey is to prove that it is a necessity to the daily diet and the medical world."—Mrs. N. MacMaster, Saratoga County, N. Y.

"I began taking Gleanings in Bee Culture when I was 18 years old and have read it ever since with the exception of one or two years. I am now 72 years old. How I did enjoy Doolittle, Dr. Miller, J. E. Crane, A. I. Root, and others of the old-time writers. Whenever one of those men passed away, I felt that I had lost a friend. I now see many good articles by another generation of writers. I have eaten honey from North, East, West and South, but have never tasted any that I like the flavor as well as that from the northeastern states."—C. E. Watts, Bourbon County, Kansas.

Just News

Editors

The Michigan Beekeepers' Association will hold its annual winter meeting at East Lansing, January 13.

The Ontario Agricultural College, Guelph, Ontario, is offering a short course in beekeeping, January 5 to 15.

The Pennsylvania Beekeepers' Association will hold its annual winter meeting at Harrisburg on January 20, 21.

The annual convention of the New Jersey Beekeepers' Association will be held January 28-29, 1932, in connection with the Agricultural Week at Trenton.

The Fourth Annual Report of the Provincial Apiarist of Saskatchewan reveals the progress being made in beekeeping in that Province of Canada.

The dates for the annual meeting of the Southern Beekeeping Conference have been changed from February 5 and 6, as announced in our last issue, to February 2 and 3.

The Wisconsin Department of Agriculture and Markets has recently published a bulletin entitled "Wisconsin Standards for the Grading and Packing of Wisconsin Honey."

The Kentucky Beekeepers' Association will hold its annual winter meeting at Lexington on January 15. Prof. W. A. Price, State Entomologist at Lexington, is secretary of this association.

C. L. Farrar has resigned his position as professor of beekeeping at the Massachusetts Agricultural College to take up work in the Intermountain Beekeeping Laboratory at Laramie, Wyoming.

The Manitoba Agricultural College, at Winnipeg, Man., will offer a short course in beekeeping, January 18 to 29. Most of the lectures will be given by A. V. Mitchener, Professor of Entomology, and L. T. Floyd, Provincial Apiarist.

The beekeeping division of the Department of Entomology, University of Illinois, will offer its usual annual short course in beekeeping on January 12-14 in connection with the Farm and Home Week of the Illinois College of Agriculture.

The North Dakota Agricultural College, Fargo, N. D., is offering a home study course in beekeeping again this year. The instruction is free, and most of the text material is free, but a fee is charged to cover the cost of postage, mimeographing, and paper.

Dr. E. F. Phillips and Mrs. Phillips are planning an extensive trip to Europe, beginning in February. They expect to spend several months among beekeepers of various European countries, studying European methods of beekeeping, and visiting laboratories where scientific work on bees is being done.

Beekeepers of Louisiana have arranged for inexpensive transportation to St. Petersburg, Fla., for those who will attend the Southern Beekeeping Conference in that city on February 2 and 3. A truck having seating capacity for 50 has been secured for this purpose. The truck is to be furnished free, but a charge of $1.00 per passenger for the round trip will be made to take care of operating expenses. Arrangements are also made for a special bus rate of $20.00 for the round trip provided 30 people occupy the bus. The bus will leave the bus station at New Orleans at 8 o'clock a. m. Sunday, January 31, but the truck will leave the same station at 8 a. m., January 29. Those desiring to take advantage of either mode of transportation should write to W. E. Anderson, Box 517, Baton Rouge, La., not later than January 20.

Among those scheduled on the program of the meeting of the American Honey Producers' League, January 26-28, are: W. E. Anderson, State Entomologist, Baton Rouge, Louisiana; James I. Hambleton, Senior Apiculturist, Bureau of Entomology, U. S. Department of Agriculture; Professor H. F. Wilson, Professor of Apiculture, Madison, Wis.; C. P. Dadant, Editor, American Bee Journal; E. J. Anderson, Extension Apiarist, Pennsylvania State College; Harold J. Clay, Marketing Specialist from the Bureau of Agricultural Economics, Washington, D. C.; Professor F. Eric Millen, Provincial Apiarist, Guelph, Ontario, Canada; Morley Pettit, Georgetown, Ontario, Canada; M. W. Baker, Marketing Specialist, Food Products Inspection Service; Geo. S. Demuth; C. W. Hauck, Assistant in Rural Economics, Ohio State University; Fred W. Muth, Cincinnati, Ohio, and many others.

Gleaned by Asking

Geo. S. Demuth

Time to Install Package Bees

Question.—At what time should package bees be installed in this part of the country? Also will three-pound packages build up strong enough to take advantage of the honey flow which starts here about June 1?—E. Vanmeter, Iowa.

Answer.—Since it requires six to eight weeks for a three-pound package of bees to build up to full strength for the honey flow, you would need to install the packages about the middle of April in your locality to have them ready for the main honey flow beginning the first of June. Yes, if supplied with sufficient food, a three-pound package, and, under some conditions, even a two-pound package, can build up to profitable strength ready for the honey flow within six to eight weeks, thus making it possible to harvest a crop of honey from package bees during the first season.

Rearing Queens Early in Spring

Question.—How early in the spring is it safe to rear queens in reference to the time of the appearance of drone brood?—Robert S. Benson, Maine.

Answer.—Young drones emerge about 24 days after the eggs were laid, and they are capable of mating ten to twelve days later or a total of 34 to 36 days from the egg. Young queens emerge about 16 days after the eggs were laid, and are ready to mate five or six days later, a total of 21 to 22 days. Thus, so far as drones are concerned, queen-rearing may be started 11 or 12 days after the first drone eggs appear in strong colonies, since the queen-cells are started with young larvae instead of eggs.

Honey Below the Brood-chamber for Winter

Question.—At the close of our season, most of the brood is in the lower story, but the bees usually move up into the second story where it is warmer before winter is over. Would it be better to put the first story containing most of the brood and the queen on top in the fall then reverse the position in the spring?—W. A. Knapp, Texas.

Answer.—Some beekeepers who are located in a mild climate transpose the two hive bodies in the fall as you describe, working on the theory that this places the winter cluster in the warmest part of the hive; also that the bees will be inclined to carry the honey above as spring approaches, thus stimulating early brood-rearing. However, this places the honey between the brood and the entrance of the hive which is contrary to the way the bees arrange their affairs. It would make it necessary for the cluster to move downward toward the entrance as honey is consumed during the winter, which in colder regions would endanger the life of the colony. In your climate, the bees would no doubt carry the honey up as needed during warm spells of weather and the unnatural location of the stores might be advantageous, but in the colder climates it might result in the death of some colonies. As a rule, we would expect better results in wintering if stores are left above as the bees arrange them in the fall.

Breeding Strains of Bees Tolerating Two Queens

Question.—I have trapped out drones from all my colonies except the one in which I discovered two queens working in harmony, and from this colony I have requeened all my colonies each fall. Do you think it would be possible to produce a strain of bees that will tolerate two queens and thus produce non-swarming bees?—O. B. King, Missouri.

Answer.—In natural supersedure it often happens that both mother and daughter work together in the same hive for some time after the young queen begins to lay. Often the old queen disappears during the latter part of the summer, but in many cases both queens remain during the winter. If this is an inherited characteristic, it would seem reasonable to expect that a strain of bees tolerating a plurality of queens could be developed. Whether this would result in no swarming is another question. The theory has been set forth that colonies having two or more queens do not swarm, and there is some evidence to support such a theory. However, it has never been established as a fact. Much can be done to reduce the tendency to swarm by careful selection and breeding, using for breeders only those queens whose colonies show the least inclination to swarm. But swarming can not be completely eliminated in this way.

Keeping Bees in House Apiaries

Question.—I believe that a house apiary would do away with a lot of robbing when hives are opened in the fall and spring. What are some of the disadvantages of the house apiary?—D. D. Lovejoy, Iowa.

Answer.—Some of the objections to house apiaries are, the extra expense of the building, rather cramped quarters for handling the colonies, confusion by the bees drifting into the wrong hives, and young queens returning from their mating flight entering the wrong hive. The latter objection can be overcome to a large extent by painting the entrances different

colors. The house apiary is not well adapted to migratory beekeeping although it is possible to build one that can be mounted on wheels and moved about. Some of the advantages of the house apiary are the one you mention in regard to robbing, the fact that the beekeeper can work during a rain, and the fact that the entire apiary can be put under lock and key.

An Almost Forgotten Practice

Question.—Just what is meant by the term "reversing" as applied to beekeeping, and what is its purpose?—Lloyd Bushby, Idaho.

Answer.—Back in the 80's and early 90's the subject of "reversing" (turning the combs upside down) was a favored topic of discussion in bee journals and at beekeepers' meetings. Many styles of reversible frames were devised which could be put into the hives either side up. In some cases the entire hive was arranged so that it could be turned upside down. The purpose of reversing was to cause the bees to fill the brood frames completely with brood and to carry the honey into the supers. By turning the combs upside down the honey would be in the lower portion of the combs and the bees would be inclined to move it into the supers. It also caused the bees to attach the combs to the bottom-bars of the frames, especially if the combs were reversed during a good honey flow. Reversing was intended to overcome one of the difficulties in comb-honey production, that of inducing the bees to begin work promptly in the comb-honey supers. The practice of reversing was dropped almost completely when many beekeepers turned from comb honey production to extracted honey production. In the meantime, present-day comb-honey producers have learned better ways to induce the bees to begin working in the supers, so reversing is almost a forgotten practice. When the fad was at its height, some even made comb-honey supers reversible so the sections could be turned upside down when the combs were well drawn out and attached, in order to cause the bees to fill them more completely.

Eradicating American Foul Brood

Question.—In fighting American foul brood, would it not be well to get the newspapers interested in spreading information about this disease, then ask all beekeepers to register at some central agency? With such a list, a systematic inspection of all colonies could be made. —Earl L. Vetter, Wisconsin.

Answer.—A serious objection to newspaper publicity in regard to American foul brood is that newspaper reporters and the reading public usually get the wrong impression about the disease. Much harm has been done by over-zealous newspaper reporters giving the impression that honey produced in localities where the disease is prevalent is not suitable for human food. Of course, we know that the honey is not injured in any way for human use, but it is exceedingly difficult to correct erroneous impressions created by sensational newspaper stories about American foul brood and its effect upon honey. Getting the beekeepers of the community together for the purpose of fighting the disease is a most excellent and effective way of bringing about eradication. In many communities, local beekeepers' societies have done more to eradicate American foul brood than any other agency. In some cases, state apiary inspectors have made it their business to organize county associations for the sole purpose of eradicating American foul brood from the community.

Queens Live Longer in Comb-honey Production

Question.—Will not the queen in an eight-frame hive run for comb honey outlast by two years a queen in a double brood-chamber hive run for extracted honey?—F. X. Castle, Michigan.

Answer.—Since the number of worker eggs the queen can lay during her lifetime is determined by the number of sperm cells she receives at the time of fertilization, the length of her useful life depends largely upon the number of eggs she lays. By limiting a queen to an eight-frame brood-chamber, the number of eggs she would lay during the season would naturally be less than if she were given unlimited room in a colony run for extracted honey where she would not be crowded by honey in the brood-chamber. However, in using the eight-frame hive, many comb-honey producers give a second story during the building-up period in the spring to provide an abundance of room for brood, honey and pollen at that time. When managed in that way, there would be practically no difference in the management of colonies for comb-honey production and those operated for extracted-honey production prior to the beginning of the main honey flow. From that time on, the queen in the colonies operated for extracted honey would lay more eggs than those operated for comb honey because comb-honey colonies are more inclined to crowd honey into the brood-chamber, thus limiting the room for brood-rearing.

Control of the Wax Moth

Question.—What can I put into the hive to keep out the wax moth? I shall be more than glad if you can tell me.—Joe Blount, North Carolina.

Answer.—The best protection against

the wax moth is to keep Italian bees and keep the colonies strong. Strong colonies of Italian bees do not permit the larvae of the wax moth to enter the hive or damage the combs. By requeening all colonies with a good strain of Italian queens, then so manage that the colonies will not become weak through too much swarming, lack of food or some other cause, there should be little if any trouble from the wax moth.

Effect of the Locality Upon Disease

Question.—Why are bees located in sandy regions more liable to have foul brood than those located in other regions?—Oscar Stevens, Michigan.

Answer.—In the case of American foul brood, there would probably be but little if any difference in its prevalence in localities where the soil is sandy and where it is largely clay, but in the case of European foul brood there is quite a difference, especially in the clover region. Where sandy soil predominates, there is usually not much clover. In such localities the main honey flow usually comes from fall flowers, thus giving a late honey flow. The absence of an early honey flow apparently is conducive to the spread of European foul brood. The theory advanced in explanation is that the stimulation of the early honey flow causes the bees to be more active in cleaning out any dead larvae or pupae, thus eliminating the disease by thoroughly cleaning all of the brood cells. European foul brood seldom does much damage where clover is abundant and yields well. In such localities it may spread rapidly during a season when the clover fails, but it usually disappears the next year when clover again yields well.

Eliminating Foam from Honey

Question.—In liquefying honey in 60-pound tin cans and heating to at least 150°, I am troubled with the occurence of foam. When the honey is poured into 5-pound pails or one-pound jars, I have to take off a heavy white scum. This takes time and is certainly a bother. Is there any method of liquefying honey to prevent this?—E. H. Althaus, Ohio.

Answer.—Instead of pouring the honey direct from the 60-pound cans into the pails or jars, it should first be poured into a tank and allowed to stand long enough to allow the air bubbles to rise. The honey can then be drawn off through the honey gate into the pails or jars. When foam begins to come through the honey gate, it is time to stop filling the pails or jars. The remaining honey can be used in the next batch after skimming off the foam. The important point in clarifying honey that is cloudy in appearance is to heat it, then allow it to stand in the tank long enough for the air bubbles to rise. This gives to the honey a sparkling brilliancy instead of the cloudy appearance caused by minute air bubbles. Heating the honey expands these air bubbles and causes them to rise when they would not do so in cold honey.

Planting Basswood Trees

Question.—Will you please tell me what is the best time to plant basswood and how it should be done?—V. E. Cole, West Virginia.

Answer.—Young basswood trees should be planted during the dormant season. Usually the best time to plant them is in the spring when other trees are planted. If you have reference to planting seeds of basswood, this can be done at any time during the winter or spring. The shells of basswood seeds are so hard that they do not germinate readily, especially if planted in the spring. For this reason, they are often planted during winter to give the moisture an opportunity to penetrate the shells. If planted in the spring, the shells should be filed thin on one side.

Entrance of Observation Hive Closed

Question.—How long can an observation hive with the entrance closed be left in a store window at this season? Would it be advisable to feed the bees syrup to keep them quiet?—J. Fekel, New Jersey.

Answer.—This depends upon the temperature of the room and the amount of light. Under favorable conditions, an observation hive can be left in a store window for about two weeks. If left longer, many bees will die, making the display anything but attractive. Lower temperatures and subdued light are quieting influences. It is doubtful if feeding sugar syrup would cause the bees to be quieter.

Dwarf Bees and Giant Bees of India

Question.—Is there any place in this country where I can obtain some of the tiny East Indian honeybees and the giant bees of India? If not, could I import them?—A. Wilson Footer, Maryland.

Answer.—Neither of these races are available in this country. Several unsuccessful attempts have been made to introduce the giant bees into Europe and America. In 1883, Dathe succeeded in transporting some of the giant bees alive to Germany, but the effort to cultivate them there was fruitless. They build a single comb in the open air, the comb usually being suspended from a limb of a tree. Efforts to confine them to hives have failed. They are migratory in their habits, and when nectar becomes scarce in a locality they desert their comb and migrate to another locality. They are also said to migrate when greatly disturbed, abandoning their comb, brood, and honey. Apparently these bees would be of no practical value, even if it were possible to keep them in this climate.

Sell and Buy Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Copy should be in the 15th of month preceding.

HONEY FOR SALE

"We do not guarantee the reliability of honey sellers, although we require strict references from them."—From Our Guarantee and Advertising Conditions.

WHITE clover honey, 6½c. Sturdevant, St. Paul, Nebr.

CLOVER honey in new 60-lb. can. Wells B. Crane, McComb, Ohio.

NEW crop honey in new 60's. D. R. Townsend, Northstar, Mich.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

FOR SALE—White clover comb, and extracted in sixties. C. Holm, Genoa, Ill.

CHOICE clover honey in 5-lb. pails, 60-lb. cans. C. J. Baldridge, Kendaia, N. Y.

HONEY by the carload or by the case; also beeswax. Walter Rink, Port Hope, Mich.

FINEST choice comb and extracted honey. Prices on request. Roy C. Stoller, Latty, Ohio.

CLOVER honey, extracted, quality guaranteed, price right. Busick Bros., Grover Hill, Ohio.

HONEY—Clover, basswood, amber and buckwheat extracted. F. W. Lesser, Fayetteville, N. Y.

WHITE clover extracted honey. Write for prices and sample. Kalona Honey Co., Kalona, Iowa.

HONEY—OUR FINEST white clover, 60-lb. can, $4.50; 120 lbs., $8.50. J. G. Burtis, Marietta, N. Y.

FOR SALE—Clover, basswood, fireweed and fall honeys in sixties or pails. C. S. Watts, Exeland, Wis.

FOR SALE—Extra choice white clover honey, case or carload. Also amber. David Running, Filion, Mich.

FOR SALE—5-lb. pails clover honey, 45c each; 12 or 36 pails to each box. Wm. G. Blake, Port Huron, Mich.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed. J. F. Moore, Tiffin, Ohio.

FINE clover honey, extracted, pound or ton. Write amount wanted and get prices. L. G. Gartner, Rowan, Iowa.

OHIO'S finest comb and extracted white clover honey. Prices on request. Sample, 15c. Geo. Morrison, Cloverdale, Ohio.

FOR SALE—Amber clover honey in sixties, 6c; one or more cases. Sample, 15c. W. J. Manley, Sandusky, Mich.

HOWDY'S HONEY—Best quality clover extracted at reduced price. Howard Potter, Jr., Beekeeper, Ithaca, Michigan.

STOLLER'S excellent quality clover honey, comb and extracted, **unexcelled.** Sample, 10c. The Stoller Apiaries, Latty, Ohio.

FOR SALE—Clover and light amber honey. Leland Farnsworth, Davison, Mich.

CARLOAD or case white extracted sweet clover alfalfa. Geo. Seastream, Moorhead, Minn.

CHOICE clover and buckwheat honey in 5, 10 and 60-lb. tins. Harry T. Gable, Romulus, N. Y.

CHOICE clover and buckwheat honey in 60's and 5's. C. F. Grauer & Son, Route 3, Saginaw, Mich.

FOR SALE—Clover honey, 6c per lb.; amber, 5c f. o. b. All in new 60-lb. cans. Geo. M. Sowarby, Cato, N. Y.

CHOICE clover extracted and comb honey. Heavy body, well ripened. Albert H. Clagg, Bellefontaine, Ohio.

WHITE clover honey, extracted and chunk. Prices on request. 1-lb. sample, 15c. F. W. Summerfield, Grand Rapids, Ohio.

HONEY FOR SALE—All grades, any quantity. H. & S. Honey & Wax Company, Inc., 265 Greenwich St., New York City.

CLOVER honey, choice, ripened on bees. Satisfaction guaranteed. Case or quantity. E. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Fancy clover honey, 60-lb. cans, by case, 7c; 5-lb. pails, 12 pails to case, $6.50. A. A. French & Son, Theresa, N. Y.

FOR SALE—Three cars white and light amber in 60-lb., 10-lb. and 5-lb. tins. Write for prices. Dadant & Sons, Hamilton, Ill.

HARRIS QUALITY white clover extracted in new sixties. One case or a car. Depression prices. J. N. Harris, St. Louis, Mich.

WHITE clover honey, put up two 60-lb. cans, 2 cans per case. State quantity wanted and I will quote price. Leonard S. Griggs, 711 Avon St., Flint, Mich.

FANCY white comb, $3.25; No. 1, $2.75; No. 2 white, amber or buckwheat, $2.25; wrapped, 25c extra. Clover extracted, 7c; amber, 6c; buckwheat, 6c. C. B. Howard, Geneva, N. Y.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, 124 Williams St., Syracuse, N. Y.

NEW CROP SHALLOW FRAME COMB HONEY, also section honey, nice white stock, securely packed, available for shipment now. Colorado Honey Producers' Assn., Denver, Colo.

NO. 1 clover comb wrapped, $3.50 case; not wrapped, amber, $3.00. Extracted in 60s, clover, 6½c; amber, 5½c. Buckwheat in 60's and 160-lb. kegs, 6c. H. B. Gable, Romulus, N. Y.

NEW YORK State clover honey, 8-case carriers, heavy fancy white, $3.25 per case; No. 1 white, $2.75 per case; white extracted, 7c; buckwheat extracted, 5c. Howard Grimble, Holcomb, N. Y.

FOR SALE—No. 1 clover comb, $3.50 per case; No. 2, $2.50; buckwheat and fall comb, No. 1, $2.50; No. 2, $2.00 per case. On a 24-case shipment, 5% discount; 48 cases, 10% discount. For other prices, write. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Section and bulk comb honey. Hyde Bros., New Canton, Ill.

CHOICE clover honey at 6c. Sample, 15c. W. A. Stith, Troy, R. 4, Ohio.

CLOVER extracted honey, case or carload. Roy Littlefield, Exira, Iowa.

WHITE clover honey, also light amber, 7½c and 7c per lb. Alice Burrows, Oran, N. Y.

COMB HONEY—All grades. Chunk comb in five-pound pails, at lower prices. N. B. Querin & Son, Bellevue, O.

MICHIGAN'S finest clover honey in 60-lb. cans. Sample, 15c. C. E. Glover, 1502 Stockbridge Ave., Kalamazoo, Mich.

SEVERAL tons very fine white clover extracted honey in new sixties. Also mild amber. Ross B. Scott, La Grange, Ind.

COMB HONEY—Fancy white, $3.25; No. 1, $2.75; No. 2 white, amber or buckwheat, $2.25 per case; clover extracted, 7c; buckwheat, 6c. Edge Water Apiaries, Phelps, N. Y.

BY MAIL—5-pound pail orange blossom honey, 75c. Also send enough to cover postage. Ask your postmaster amount necessary. Mailing weight, 6 lbs. A. W. Nations, Donna, Texas.

FOR SALE—Well ripened white sweet clover honey. Don't let your customers be without honey. The stock we furnish will please them. Write today for prices. Colorado Honey Producers' Association, Denver, Colo.

COMB HONEY—Fancy white, $3.25; No. 1 white, $2.75; heavy light amber and fancy buckwheat, $2.50; chunk comb in 5-lb. pails, $6.60 per doz. Also white and buckwheat extracted in 60's and 5-lb. pails and any size bottles. Carlton D. Howard, 50 Lafayette Ave., Geneva, N. Y.

HONEY—We sell the best comb in carriers of eight cases each—extracted basswood, buckwheat, sweet clover, white clover and light amber. Tell us what you can use for prices. A. I. Root Company of Chicago, 224-30 W. Huron St., Chicago, Ill.

GREETINGS, 1932! May you break depression's throttling stronghold to earth's troubled peoples and return prosperity during your brief reign! Lower prices on the balance of car honey and 2500 gallons pure maple syrup. Won't you tell us confidentially just what your needs are so we can figure with you and save and make you $$$$! Will you permit us to give you a taste of our maple products, sugar, or maple cream, and especially black walnut fudge? You know we'll deliver it to you free 1000 miles and go halfway if you're more distant. SERVICE is our middle name, but don't buy of us once unless you are free agent, for we never lose a customer once sold. Cordially yours, Griswold Honey Co., Madison, O., U. S. A.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—All our honey-producing friends should take note of the following from the "Guarantee and Advertising Conditions" of Gleanings in Bee Culture: "We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only or on C. O. D. terms except when the buyer has thoroughly established his credit with the sellers."

WANTED—Car lots of honey. State quantity, shipping point, and price. Mail sample. Hamilton, Wallace & Bryant, Los Angeles, Calif.

WANTED—A car or less quantity of white honey, in 60-lb. cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, Birmingham, Mich.

HONEY WANTED—60-lb. cans, white clover extracted. Submit sample and price. No New York State honey wanted. Roscoe F. Wixson, Dundee, New York.

WANTED—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c pound for wax rendered. The Fred W. Muth Co., Pearl and Walnut Sts., Cincinnati, Ohio.

FOR SALE

AUTOMATIC swarm trapper; practical, efficient. Literature free. Vikla Manufacturing Co., Lonsdale, Minnesota.

FOR SALE—Barnes saw table, steel top. Root uncapping machine, excellent condition. Reasonable. Appeldoorn, Hamler, Ohio.

OLD BEE BOOKS—Big reduction in prices, 33⅓% off list prices in lots of 25 or more. Corresponding discounts on smaller lots. John F. Hawkins, Box 203, Chester, Pa.

COMB FOUNDATION—Note these low prices on 20-lb. lots: medium brood, regular or nonsagging, 46c lb.; tin section, 53c. Wax worked at lowest prices. E. S. Robinson, Mayville, N. Y.

BEST quality bee supplies, attractive prices, prompt shipment. Illustrated catalog upon request. We take beeswax in trade for bee supplies. The Colorado Honey Producers' Assoc., Denver, Colo.

FOR SALE — Fine quality queen-mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamiton Bee Supply Co., Almont, Mich.

BEE SUPPLY SPECIALTIES

METAL EYELETS in your frames will stop the WIRE SAG which is responsible for most SAGGED COMBS. METAL EYELETS, per 1000, 60c. Handy tool for inserting eyelets, 25c, postage, 3c per 1000. Superior Honey Co., Ogden, Utah.

BEES AND QUEENS FOR SALE

WHOLE colonies of bees, if advertised for sale in these columns, must either be guaranteed free from disease, or, if not so guaranteed, the exact condition of the bees and the conditions of sale must be clearly stated in the advertisement; or, it will be satisfactory in the advertiser will agree to furnish a certificate of health from some authorized bee inspector at time of sale.

TESTED QUEENS, 75c EACH. Send queens anywhere. Order now. D. W. Howell, Shellman, Georgia.

WRITE for new low prices on Mountain Caucasian bees and queens; also booklet on description and management. Bolling Bee Co., Bolling, Ala.

FOR SALE—TWIN-DEL QUALITY QUEENS and ROOT QUALITY BEEKEEPERS' SUPPLIES. Prompt service. W. G. Lauver, Middletown, Pa.

GROOM'S high-grade yellow queens are bred for honey-getting, gentle, yellow bees. Best queens with best service. Willie Groom, Gashland, Mo.

MOUNTAIN Gray Caucasian queens. We are booking orders for April and May delivery, 1932. Write for prices. Lewis & Tillery Co., Rt. 6, Greenville, Ala.

MY circular brings special price on 3-pound packages Italian bees. Spring delivery. With orders booked during January, February and March, will give ½-lb. bees free with each package. The Gooch Apiaries, Farmersville, Texas.

ITALIAN BEES CHEAP—I still have too many bees. Until they are sufficiently reduced I will sell cheap. Circular gives particulars and prices. Usual guarantees. Dr. Stiles, P. O. Box 422, Houston, Texas.

HELP WANTED

WANTED—Two experienced beekeepers for season of 1932. Roscoe F. Wixson, Dundee, N. Y.

WANTED—The address of those having had success in producing the small one-fourth size individual comb-honey sections, and could undertake large quantity production. Address Comb Honey, Room 506, 6 East Lake St., Chicago.

SITUATIONS WANTED

EXPERIENCED beekeeper wishes employment in apiary. William Horne, c/o Gen. Del., Corsicana, Texas.

SINGLE man, experienced in bee, poultry and turkey raising, wants work as helper for season 1932. Wm. Falk, Milltown, N. J.

YOUNG man, with four years' experience in large apiaries. New York or Texas preferred. Other places considered. Gilbert Anderson, Webb City, Mo.

MISCELLANEOUS

FOR SALE OR EXCHANGE—Lewis capping melter (new). Root wax press. Wanted, 10-fr. supers for Danz. sections. F. G. Fox, 2462 Butler St., Easton, Pa.

GROW Vitex trees for beauty and bees, 12 to 24 inch trees, 30 cents; 25 or more, at 25c; 24 to 36 inches, 50c; 25 or more at 40c. All prepaid. Seed, $1.50 per oz. Joe Stallsmith, Galena, Kans.

FOOD DEPARTMENT

(Continued from page 51.)

that starts the day off quite so well as a good breakfast rich in calories, full of abundant stores of heat and energy? The sugars and starches are splendid fuel foods and ample helpings of breakfast foods drizzled with honey, stacks of hot griddle cakes served with honey, crisp hot waffles topped with a honey butter sauce—all are good protection against winter cold. Honey muffins piping hot served with comb honey—isn't that a good beginning for any cold day? Honey is high in energy value and its sugars serve as fuel for muscle activity. Besides, the additional flavor of honey is always pleasing when properly blended in fruit sauces or drizzled over grapefruit.

Menu Suggestions

Honey drizzled baked apples, Kellog's All bran waffles, honey sauce, crisp bacon, Kaffee Hag.

Honeyed grapefruit, Corn Flake muffins, packed eggs, comb honey, hot chocolate.

Orange slices lightly honey drizzled, fried cornmeal mush, spiced honey sauce, little pork sausages, coffee.

Recipes

Honey Cream Waffles—2 eggs beaten lightly, 2 cups milk, ⅓ cup melted shortening, 3 tablespoons honey, 2¼ cups flour, 4 teaspoons tartrate baking powder or 2 teaspoons phosphate baking powder, 1 teaspoon salt.

Blend melted shortening with honey, add beaten eggs. Sift dry ingredients and add to first mixture alternately with milk. Be sure your electric waffle iron has been properly preheated before pouring over the batter.

All Bran Waffles—Pour regulation honey cream waffle batter on waffle iron, sprinkle over ¼ cup Kellogg's All Bran over top and let the top lid down. Bake as usual.

Oatmeal Gems—1 egg, ¾ cup milk, 1 cup oatmeal, 6 tablespoons melted shortening, ¼ cup honey, ¼ cup chopped walnuts, 1½ cups flour, 1 teaspoon salt, 4 teaspoons tartrate baking powder.

Beat egg lightly, add melted shortening and honey. Mix together the flour, oatmeal, baking powder, salt and nut meats. Alternately add milk and flour to egg and honey mixture until all milk and flour have been added. Bake in well greased muffin tins for 25 minutes in hot oven (400-450° F.). Will make 15 muffins. Raisins, dates or figs may be added if desired.

Plain Honey Sauce—Place two or three parts of honey (depending on intensity of flavor desired) and one part of butter in a bowl and cream and beat the mixture until very smooth. If the butter is allowed to stand in room temperature for a while it will blend easier.

Spiced Honey Sauce—Place plain honey sauce in a bowl, add finely ground cinnamon to taste, blending the ingredients well.

Honey Pineapple Sauce—Cream ⅓ cupful butter with one cupful warm mild honey. When well mixed add 2 cupfuls drained shredded pineapple.

GASPARD'S

High quality Golden and Three-banded Italian Queens and bees are now ready to book for spring 1932. Write for new price list. Address—

J. L. Gaspard, Hessmer, Louisiana

TOLD BY THE JAY

(Continued from page 32.)

a radio and to buy a can opener. Maybe the bride has a little account of her own. Enough to buy cigarettes and a ticket to Reno.

Now, some of our readers will say I take a pessimistic view of our young people of today. Not at all, for there always has been the class just mentioned, and there are no more if as many today. Go into our high schools today and if you are real candid you will admit that the young boys and girls are better than they were when you went to school.

So here is to '32. May the young folks who read this plan on a real honest-to-goodness honeymoon, honey and all, make a lasting job of it, and keep the vow, "Till death do us part."

White clover and buckwheat comb and extracted honey for sale. H. E. Crowther, Jefferson, O.

Red Stick Apiaries

1932—PRICES—1932

Two-lb. Package with Queen.

1-10	25	100
$2.50	$2.40	$2.25

Three-lb. Package with Queen.

1-10	25	100
$3.25	$3.15	$3.00

Five-lb. Orchard Package
$4.70

Select Queens, 70c.

Large apiaries, low prices, responsibility.

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CHAS. J. WILLIAMSON
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Stahelin's Guaranteed FRUIT TREES
APPLE-PEACH-PLUM

Also Cherry, Apricot, Quince, etc. Finest quality. All grown in our own modern nurseries. Order direct from grower at real bargain prices this year.

Send for New Catalog

which illustrates and describes all leading varieties, including Strawberry, Latham Raspberry, Black Raspberry and other first grade guaranteed small fruit plants and ornamentals. Get the best, and make sure of results. Order from this catalog and save money. Write today to

F. C. STAHELIN & SON, Box 27, Bridgman, Mich.

We thank you for the liberal patronage in 1931. Let us quote prices on bees and queens for 1932.

W. D. ACHORD
FITZPATRICK, ALABAMA

BUY

Three-ply Airco Foundation

FOR SPEED!

---PRODUCES THE BEST BROOD COMBS POSSIBLE.

Root QUALITY —BEE SUPPLIES—

THE A. I. ROOT COMPANY
MEDINA, OHIO

Root QUALITY —BEE SUPPLIES—

TOO LATE FOR CLASSIFICATION

1930 crop clover-basswood honey, also 1931 crop amber fall honey, new 60-lb. cans. Write for prices. Sample, 10c. Meyer Toom, Route 4, Knoxville, Iowa.

WANTED—An experienced beekeeper to run 300 colonies of bees on shares in Michigan. Write to Homer Flickinger, 1603 Park Ave., Parkersburg, W. Va.

Low Price

BEES AND QUEENS. L. L. FOREHAND'S STOCK THAT HAS WON A REPUTATION over most of the world, can now be bought for less money than ever before.

Let us quote you prices. No order too large and none too small. Satisfaction guaranteed or money refunded. Write for circular.

L. L. Forehand Apiaries
JESUP, GEORGIA

More Cheap Bees
20,000
PACKAGES

Plenty Queens, Too!
Price List Ready

Merrill Bee Co.
Buckatunna Mississippi

Stahelin's GUARANTEED

SHRUBS and TREES
Also Fruit Plants
at New Low Prices—Buy Now

Buy direct from grower at big savings. Ornamentals and rose bushes of the very best types and quality at remarkable bargain prices. Select now from our fully illustrated catalog and save money. Also all leading varieties of Strawberry plants, including Stahelin's Original Famous **MASTODON**—and other small fruit plants—Raspberry, Blackberry—and fruit trees—Apple, Peach, Pear, Plum. Big Color Catalog **FREE.** Write today to
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We are now booking orders for 1932 delivery. We have the stock, equipment and experience and can give you prompt service. Our queens and bees are as good as money can buy. Have never had one complaint. Satisfied customers in every northern state and every province in Canada. There is a reason. Write for circular and prices.
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Horse-High Bull-Strong
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34 CENTS A ROD

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Fence for every purpose **direct to you** at manufacturer's lowest wholesale prices. Our **Encyclopedia of Fence** is free. A good time to economize. Send for it today!
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The kind WE use in our extensive Michigan Apiaries, where WE produce honey by the carload.

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Service guaranteed. Stock bred for honey-getting and gentleness. PRICES RIGHT. Let us name you prices on any quantity.

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They help beekeepers to secure larger crops of honey. Write for our free booklet, "Combless Package Bees," also prices on packages and queens.

THE A. I. ROOT COMPANY, MEDINA, OHIO

Package Bees

for 1932

Quality Bred Italian Bees and Queens will not fail you. Never before were we in better position to offer you a greater saving on your early orders than now. Our beekeeping experience dates back beyond 1908 and our successful career is based on our ability to render safe and satisfactory service to our customers. You, too, will be pleased with the quality of our bees, price and service. Let us quote you on any number of packages for delivery when you want them. Shipping starts around April 1st.

Lewis Beeware and Dadant's Foundation at Catalog Prices.

York Bee Company

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1932?

Jensen's Package Bees and Queens, of Course

1931 was a disappointment in many ways, but a revelation in others. This is simply our announcement to our friends that we will continue to offer our goods and service just as we have in the past. May we have the privilege of quoting you?

Thanking you for all past favors, and soliciting your continued patronage on the basis of complete satisfaction in your bee and queen purchases, we extend to you best wishes for "A Happy and Prosperous New Year."

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Buy certified plants

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If you are in market for a supply of packages, it will pay you to act promptly.

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GARON BEE COMPANY, DONALDSONVILLE, LA.

"I Didn't Get Much Honey But Here's My Check"

A. L. Moberg, Brookings, S. D.

"Here Is My Check

for $4.56 for the Institute. I didn't get much honey this year as the season was too dry. About three tons of comb honey, or near that. Not enough beekeepers are getting behind the Institute. Several hundred could and should support it, right from this state, and I wonder **what is the matter with them?"**

Will You Help Decide the Future of the Institute?

There is now no question about the soundness and the effectiveness of the way in which American Honey Institute gets behind your honey. Letters from beekeepers, associations, honey distributors, and honey users, from practically every state, prove this value.

But the work can not go on without just the kind of help Mr. Moberg gives. The time has come to decide the future of the Institute. **It will be decided** at the annual meeting of American Honey Institute at Columbus, Ohio, January 25. If you expect the Institute to continue to work for you, make good use of this coupon now so the directors will say—**go ahead.**

Basis of Support---Honey or Money

Honey—equal to one-half of one per cent of your crop.

Money—$1.00 per ton—either way, take your choice, but use the coupon now. (Send honey to any of list of receivers on page 776, December, 1931, issue.)

American Honey Institute, 225 Wimmer Bldg., Indianapolis, Indiana.

I pledge my support to the work of the American Honey Institute for 1932.

Enclosed is my check for.....herewith.

I have sent.....pounds of honey to.....
(Name of receiver.)
..... who will send value in money to you.

Name..... Address.....

(Mail to American Honey Institute, 225 Wimmer Bldg., Indianapolis, Indiana.)

(This space donated to the American Honey Institute by Gleanings in Bee Culture, Medina, Ohio.)

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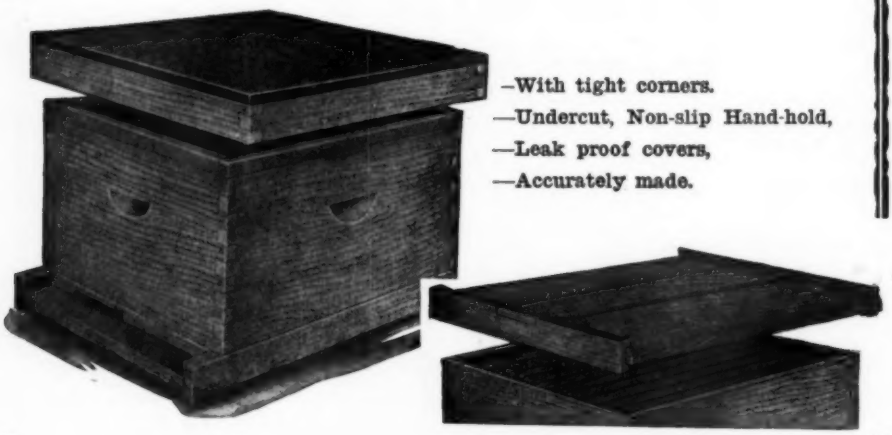

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